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—SELF SUFFICIENCY AND PLANET CARE—

EARTH GARDEN

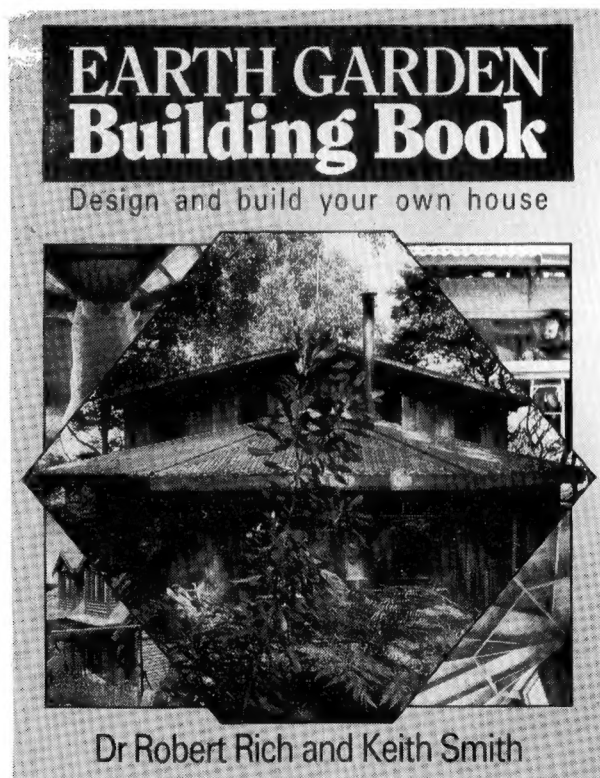
—FOR BUSH OR CITY ALTERNATIVES—



• Making the break with Angoras • Donkey training
• Making a pioneer work shirt
• Growing fennel • Building an African village • Pickles and chutneys
• Planting trees for shelter and woodlotting
• Frost-free gardens • Growing sprouts
• EG Reviews • Earth People Write • LAND LINES and much much more . . .

EARTH GARDEN BOOKS

Order form on page 56



EARTH GARDEN BUILDING BOOK *Design and build your own house*

Dr Robert Rich and Keith Smith

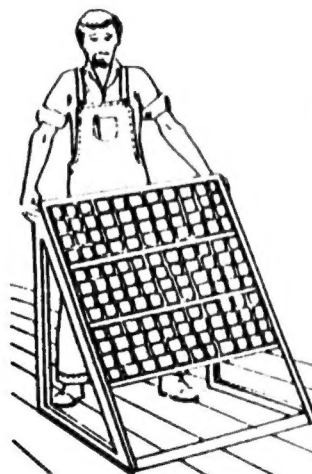
Nelson, 1987, 315 pages, illustrated, large format paperback. \$24.95 posted.

This is the book many people have been waiting for since they first dreamt of building their own home from natural materials in harmony with their surroundings. It answers all the questions for Australian owner-builders. It's a 'practical book for dreamers' and it faces the difficult subjects square on. What the authors have done is show how anyone of average intelligence and reasonable health can build their own home, and probably not end up with a 25 year mortgage at the end of it all.

"This book is intended to provide an antidote to the stereotyped Australian suburban sprawl of red brick houses with red tile roofs, set squarely in a rectangle of ground," said authors Bob Rich, and former Earth Garden publisher and editor, Keith Smith.

AT LAST! EG BINDERS TO PROTECT YOUR COLLECTION

These sturdy magazine binders have recently been produced to protect your collection of back issues. Each binder snugly holds 12 copies of Earth Garden, and prevents tears, dog ears and bent pages. The binders are made from a tough, 'deer-hide tan' vinyl, with the Earth Garden name and logo stamped in gold foil on the cover and spine.



ENERGY WORKS!

Home Energy Systems

By Keith Smith

Nelson, Melbourne, 1985, large format paperback, 211 pages, illustrated. □ \$19.95 posted.

Why spend the rest of your life paying someone else for your electricity? Here's how to plug in the renewable energy of the sun, wind or water using an efficient 12V or 240V solar electric system, wind generator or water turbine. Run lights, radio, TV, computers, tools and appliances wherever you live.

"The major part of this book is devoted to practical issues, hardware and actual installations.

"... This book should appeal to anyone with an interest in the supply of energy to weekenders, farms or other remote dwellings or even to the suburban household." — Dr C. J. L. Cornish of Murdoch University, WA, in *APACE WA Newsletter*.



HARD TIMES HANDBOOK

Survive — and thrive!

Keith & Irene Smith

Nelson, 1986, 204 pages, 70 illustrations. □

This is the second, corrected edition of our practical book of skills, strategies and short-cuts for urban survival. **HARD TIMES HANDBOOK** outlines a new, self-reliant

approach to city living. It tells you how to do more with less, be prepared for food shortages and emergencies, save energy, make money without a job and manage your food supply. Make bread, yoghurt, soft cheese, candles and soap. There are 150 recipes for cheap, healthy tucker and 180 money-saving household hints.

—SELF SUFFICIENCY AND PLANET CARE—
EARTH GARDEN
 —FOR BUSH OR CITY ALTERNATIVES—

Number 62 — August/September 1988

Cover photo: Judy Sims of Windeyer, near Mudgee in New South Wales, recently 'made the break' from the city with her husband and has established a flourishing Angora goat stud on their 93 acre property (see page 8).

•This issue's tree tax will be donated to the Australian Conservation Foundation(ACF).

Dear readers	2
Earth People Write	3-7
Making a move with Angoras by Judy Sims	8-10
Let there be light by Julia Todd	10-12
Donkey Training, part II by Marja Fitzgerald	13,14
Whatever happened to taste? by Arthur Brotheridge	14-16
Fennel Florence by Liz Sinnamon	17
Make a pioneer workshirt by Carolyn Burgess	18-20
Frost-free gardens by Jackie French	21-23
The come-along winch by Steve Fitzgerald	23-26
A soiled reputation	26
Tree regeneration by Chris & Rhonda Martin	27,28
Growing farm fodder trees	29-31
Access	29
Beat the tree munchers	32
Cost of home heating	32
Dribond: better than a Remington by David McMunn	33
Energy Pulse	34
Pickles & chutneys to eat and sell by Pamela Odijk	35-38
Whack-o the wood splitter by Alan Thomas	39
Down Wallaby Creek by Jackie French	40,41
Council of all Beings	41
How to Change the World by Bob Rich	42,43
Growing sprouts for life by Jose Robinson	43,44
Season by Season by Jackie French	45-48
An African village in Melbourne by Maree Keating	48,49
Earth Garden Reviews	50,51
Unclassifieds	52
Land Lines	53-55



Founded by Keith & Irene Smith, 1972.

EARTH GARDEN is Australia's original journal of self-sufficiency and alternatives. It is intended as a forum of practical ideas, shared knowledge, sources and to point towards alternatives to unfulfilling consumerist lifestyles.

It's about putting a roof over your head, growing your own food, using alternative energy systems, and surviving — and thriving in the city or the bush, with the inner changes which follow when you're in tune with Nature.

Published and edited by Camille and Alan Thomas.

Book Review Editor: Sophie Masson.

Illustrations by Bronwyn Halls.

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Contributions to EARTH GARDEN are welcome — sharing information and experiences with other readers strengthens the network of Earth Gardeners.

Photos, illustrations and diagrams are important when sending us contributions.

Subscribers are sustainers — for subscription details see page 56.

We welcome advertisements appropriate to the aims and ideals of EARTH GARDEN, but reserve the right to refuse ads at our discretion. Write to us for display rates.

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Distributed to newsagents by Gordon & Gotch Ltd, Melbourne.

Dear readers,

Welcome to the August issue of Earth Garden. While we're sitting here in the office writing to you, the sun is streaming in the window for the first time in the four weeks since we moved up here to our new bush home. It's that time of year in this part of Victoria and the locals tell us we should see the sun again around mid-October.

This year seems to be flying past but we're both really looking forward to the start of spring when plants and vegetables start moving again. It doesn't seem to matter how often you experience it — there's nothing to match the excitement of finding the first row of spring vegetable seedlings has popped through the soil on the way to becoming beautiful ripe vegetables.

We can't wait now to get out and start our new vegetable garden, and I'm sure the 'buttocks test' will come in handy (in Season by Season this issue) — Earth Garden has kept us constantly indoors for the past month. Many people are surprised to find us sounding croaky and half-asleep when they ring at 10 in the morning: "Aren't you two out of bed yet?!" they exclaim in horror.

It's usually because we have a different routine to many people. Our most productive work time is late afternoon and evening, so we often work till midnight or so (usually till 3:00 am in the week before deadline) and get up later in the morning. We always say we must get to bed earlier but we never do. We're lucky that Tane isn't a 6 am child — he usually sleeps till about 9:30 too.

Our only problems seem to be co-ordinating meals and fitting in phone calls in business hours. We often forget till after the phone's been ringing for a while, that the bank's not open at 6 pm. Often we have lunch at 5 pm and I remember a few months back our office helper, Natasha, had her evening meal at 5:30, came around to our place to do some work at 7:30, and we were just tucking into lunch! We've both developed quite a technique of stumbling to the phone more asleep than awake, and answering the phone in a chirpy voice as though we got up with the birds.

We're lucky that being self-employed allows us the luxury of rearranging our work hours, but I'm sure many Earth Gardeners also forget the old 9 to 5 habits.

A dear friend of ours, and old fellow-campaigner from parching in the South Australian desert in the Roxby Downs Uranium Mine Blockades, Maree Keating, is co-ordinating a very exciting and different Community Aid Abroad project in Melbourne. The 'Into Africa' project story is on page 48 of this issue and Maree has already had a phenomenal response from the public and the media. Over

110 school groups have now booked to take part in helping build an African village of 'tukuls', the thatch and adobe huts of traditional village systems. Maree now needs some raw materials to help with the first building stages of the project; the details are on page 49 and we hope that some readers may be able to help with materials.

We've been very encouraged by the response from readers to our gradual inclusion of a few regular environmental stories in Earth Garden. We were very wary of this to start with because we don't want people to feel we're ramming anything down their throats. The general response has been that people are pleased to read the occasional environmental or political story where it relates to the subjects of Earth Garden we all hold so dear to heart.

We've also been very heartened by the continuing messages of support for the Earth Garden tree tax. One day maybe all publishers will have tree taxes. We are keen to hear from readers in tree planting and reforestation groups throughout the country who would like to nominate their work, plans or current projects for an issue's tree tax. We don't see it as only going to large established groups, and smaller community groups are just as important. We also love getting letters on any other subject!

Last month we were invited onto a Melbourne radio program run by Glenn Heyne. Glenn has a Sunday morning gardening and small farming program on 3UZ and we spent an hour chatting about all sorts of Earth Garden subjects. We were amazed at the number of letters we received from listeners in the weeks after the program and Glenn has invited us to come back regularly to speak on various EG subjects. On the subject of good responses, we were very excited to learn recently from Earth Garden's distributors, Gordon & Gotch, that the February issue of Earth Garden marked the start of a dramatic increase in the number of people buying and reading Earth Garden.

The February issue broke all the previous sales numbers, and explains why we suddenly started getting huge numbers of orders for back issues, books and subscriptions earlier this year. We kept wondering to each other why we were so busy wrapping parcels compared with the same time last year. The rises this year have been the main reason we have not been forced to increase the cover price of Earth Garden before now. The cover price has been held at \$2.75 since the end of 1984, and unfortunately we will be forced to put it up later this year (just giving you a bit of advance warning so you don't get too much of a shock).

We hope you enjoy this issue's EG allsorts: it was a real toss up between a number of stories on tree planting, or on wood heating, and tree planting won this time around.

Happy reading,

Camille & Alan



Earth People Write

Letters to Earth Garden are always very welcome.

Coffee, carob and cashews

Dear Sir,

I should be obliged if any readers could advise me where I could obtain information on the growing and processing of coffee beans, cashew nuts and carob beans. I have an orchard of young tropical/subtropical fruit trees and bushes and wish to use chemical-free sprays and deterrents on them to keep the bugs at bay. If you could advise me where I can obtain/purchase such information I would be grateful. Thanking you in anticipation.

Clive Worsell, MS 659 B, Mt Marlow via Proserpine, Queensland, 4800.

Rat problems

Dear Editors,

I seek help from other readers with a problem many before must have faced, namely *rattus fuscipes*. This creature is the native rodent which lives in forest and bush areas over much of Eastern Australia.

Unfortunately, this area includes my ceiling and occasionally, most of my house. (The house is in the mountains near Bega, New South Wales). I have seldom seen them in the house, but droppings, footprints and damage to the furniture (for example gnawed wooden cupboard doors) testify to their nocturnal visits.

The previous owner has clearly tried many methods — unsuccessfully. *Rattus fuscipes* keeps on coming back. Our difficulty in dealing with these creatures is probably compounded by the fact that we generally only use the house at weekends. I do not want to harm the bush rats, just keep

them out of my house. Any ideas would be greatly appreciated. Yours sincerely,
Keith Hughes, 21/3 Lane-Poole Place, Yarralumla, 2600, ACT.

Earth Garden Building Book

Dear Alan & Camille,

Having just discovered your magazine for the first time, and it being an issue from last year (EG 56) I'm writing to let you know I'm impressed by the practicality of the publication and also: can you give me information on whether your Earth Garden Building Book featured in this issue is still available. If it should not be available, will it be reprinted, and if not are there any other publications of the same lines and calibre that you can suggest as alternatives? How about a few articles/recipes on wheat-free bread baking, for example, unleavened loaves. We have a wheat, sugar, salt, yeast, honey and dairy product free diet. Yours,
Lisa Coleman.

The Earth Garden Building Book is still available from us for \$24.95 posted, and we are probably one of the few places with remaining stocks. The book sold so strongly after its release last September, that Penguin Books are already in the process of reprinting it, after selling all their stocks. We are expecting the reprinted edition to be released in September, but in the meantime we can supply readers with the supplies we hoarded for the winter. —Camille & Alan.

Mudgee reader busy

Dear Camille and Alan,

I have been an Earth Garden

person since the 1950s and now in my mid 50s am still involved. Having sold my small property some years ago I have been assisting others of a like mind. At present I am living on a 700 acre sheep and wheat property restoring the gardens of a very old homestead which haven't seen a gardener for 20 years.

All the trees and shrubs have got completely out of hand and many had to be removed due to rot setting in because of neglect. There are also about 50 fruit trees of 11 varieties including nuts. One old grape vine took 2 1/4 hours alone to prune. Sheds and garages were completely overgrown with vines or creepers: replanting is under way.

The most beautiful things here are the main driveway and all paths front, rear and sides: they are all old time crazy paving set in cement. Since the beginning of the year, an average of one tip truck a week has been going for disposal. A vegetable garden has been established and I'm planting new lawns.

Having now just about got it all under control I am negotiating to take on the restoration of a turn-of-the-Century school which has been completely neglected since closure as the organisation involved has no funds. Hope to develop it as a tourist interest. This is a spare time interest as I am in regular part time employment on the local vineyards, picking and pruning.

Keep up the good work. I would like to correspond with any like-minded lady from mid 40s who is into crafts and outdoor life, as all my family has grown & moved on. Yours in peace,

Chas Holgate, PO Box 365, Mudgee, New South Wales, 2850.

Developing a new lifestyle

Dear Camille & Alan,

I really enjoy reading your magazine. Most of all I think I enjoy the stories other people write about their experiences, setting up and moving to the country. Thought I would write my story if you would like to print it.

I grew up in the country, and spent the first 30 years of my life there. Then the family moved to Brisbane when my Dad retired from the Railways. I didn't want to go, but my Dad said you will come, or else (in those days you didn't argue — you did as you were told). But I always had a dream of having a small place in the bush where my children could grow up with a few chooks and ducks and animals, but when you are busy rearing a family as well as working at a job outside the home (to make ends meet) the years fly by. Before you know it the children are grown and you are middle aged. I was married for 26 years. The last 10 years or so were very stormy and it didn't help to have teenage children going through all their traumas also. So, to cut the story short, we (my husband and I) separated three years ago and went our separate ways. My children are all grown up and independent, so I moved to where I am now. I have a small house on 1/4 acre.

The rainfall is good, and as we only have rainwater tanks it's just as well. When I first came here the place was neglected, grass up to your waist, a gully full of Grounsell weed and me all alone for the first time in my life. I tell you it was a real shock. Anyway I managed to get the grass down and finally attacked the Grounsell — it still pops up here and there but I have it under control. I have gone through many changes of mind in the two years I've been here. Sometimes I like the place and I feel content, it's peaceful and quiet. Other times I hate the loneliness, but I would probably feel this way, no matter where I was living. Shortage of money is another problem, but we all know about that.

After two years I have a nice vegetable garden, quite a few fruit trees, two chooks, two ducks and two guinea

fowl, also a dog — he's great company when I'm lonely. Another drawback here is getting manure from the garden, everything has to be brought over from the mainland.

My youngest son and his friend are staying with me. So, he is doing a lot of the jobs around the place I can't manage. We have just painted the outside of the house and will soon tackle the inside (if I can keep him interested).

All my children (two daughters and two sons) are a great help to me, as are their partners, so I really am a very lucky lady. I have gone on long enough so I will close now. Peace and love to all, Helen.

In search of seeds

Dear Earth Gardeners,

A few months ago I discovered the joys of growing things from seed: trees, shrubs, vines, herbs, anything, preferably perennials. In a few years time our block here in the SW will probably look like a botanical garden. When I run out of space I'll start planting roadsides and asking neighbours if I can plant their unused paddock for them with all kinds of plants. May be crazy but simple and satisfying.

I am looking for seeds and I wonder if any of you out there could help me with this: Soursop or Guanabana (*Annona muricata*), Taro (*Colocasia esculenta*) and Cassava (*Manihot esculenta*). I know that Taro and Cassava are usually not grown from seed, but suckers or cuttings are not readily available in the area, and I like growing things from seed. According to the very useful and recommendable publication "Economic Plants and their Ecological Distribution" (by Duke, Hurst and Terrel) all of the above should do fine here in the SW. And in Fiji I really enjoyed Taro, Cassava and Rourou (taroleaf spinach), so I'll give it a go.

Also I seek any seeds in general and those of natives in particular, so if you have some to offer please sent me your list (and prices?), I am also willing to trade and gratefully accept donations of seeds. Wherever known with botanical names, thank you. Also, any ques-

tions or advice welcome. Happy growing and peace to all.

G. Parlow, P.O. Box 105, Pemberton, Western Australia, 6260.

Dear Camille & Alan,

The magazine will be getting quite a lot of use again soon as the house we've bought is close to 5 1/2 acres which we plan to build on and start an organic garden and orchard. I look forward to receiving your magazine and hope you keep up the good work.

Yours sincerely,

Mrs B Harris, Howard, Queensland.

Organic vegetable sprays

Dear Camille and Alan,

Hi, I'm in the process of planting a crop of snow peas. I'm also growing several vegetable crops, included in this are cauliflower, beans and cabbages, among many others. I was hoping that in a future issue of Earth Garden, you could print an article on how to make up organic sprays to treat mites or wilt on snow peas and other vegetables.

As an avid reader, I will look out for such an article, and thank you for such an excellent magazine.

Melissa Lapham, Gympie, Queensland.

Dear Melissa,

In this issue's Season By Season, Jackie gives a few 'recipes' for organic sprays.

—Alan.

Grain growing book source?

Dear Camille and Alan,

In the June/July issue you featured a story "Towards food self-sufficiency" by Arthur Brotheridge, which we found very interesting. However, the book listed in the bibliography 'Small-Scale Grain Raising' by Gene Logsdon (Rodale Press), is shown to be available from ANZ Book Company at Brookvale. ANZ Book Company does not appear in the telephone book, nor does Rodale Press, and letters sent to ANZ at the address shown are returned as 'box cancelled'.

I am writing to enquire if you know of any other publication of this book or if there is any other way to obtain a copy. We plan to grow grains when we move up to our property in November. Any assistance would be appreciated. Yours sincerely
Sivan McGarry, 2 Norwich Road, Rose Bay, New South Wales, 2029.

Dear Sivan,

Our enquiries have shown that Rodale Press have gone out of business. The ANZ Book Co at Brookvale has also gone out of business, selling a lot of their remaining books to Collins. Collins Booksellers have no record of this book however, so unless the author, Gene Logsdon, has bought back the books from the publisher and can be contacted there seems little hope of obtaining this book. If any other readers know of a similar, reliable book, we would be pleased to hear about it.

—Camille.

Calling Victorian Earth Gardeners

Dear Alan and Camille,

Having tormented those around me about the abuse we dish out, not only to each other, but more importantly the earth, air and water that we depend upon, I think it is about time I put my words into work.

For year now, I have read all the self sufficient and organic farming books I could find. Earth Garden is a great chance for people who understand just how badly our land has been degraded, to get together and share thoughts. I had no idea that there were so many people adopting an alternative lifestyle. We all hope, I'm sure, that we can set an example for everyone, on a lifestyle that future generations are going to have to adopt anyway. The human body cannot adapt to the ever increasing pollutants it is subject to.

I will soon buy some land of my own, and begin to start a new life. I am 24 years old and have saved hard for the past six years. Money isn't the problem. I just want some practical experience and advice, and helpful tips

from anyone who is willing to share their self-sufficient lifestyle with me. I'm quite prepared to work as I look and learn.

My thoughts are in the right place, now I need to develop the skill and know how. Could anyone in Victoria who would be interested please contact me? As I said the best way to learn is to work.

I'm a woolclasser by trade, and have worked on many farms doing odd jobs in New South Wales, but as we all know organic farming is very much different to that of conventional methods. We have been on a path of destruction for the past 200 years — my aim is to slow that road, that has got wider, longer and downhill. I want to help detour the traffic and provide a few steep inclines. I hope to encourage young people just as I have been encouraged by you, and at the same time live a happier life. Yours sincerely,
Brett Geddes, 25 Willonga St, Strathmore, Victoria, 3041.

Felonious felines in the bush

Dear Camille and Alan,

May I offer you both pats on the backs for your editorial changes. In particular your new focus on environmental issues. Avoiding such issues to narrowly concentrate on the rosy idealism of vegie gardens and house cows is both a little apathetic and escapist. Even though we are indirectly undermining the consumer society by our low impact lifestyles, it is still very important to be aware of the environmental and political issues concerned with 'living on the land'. I'm sure we could be giving a lot more to the planet and taking a lot less from her than we all are at the moment, while at the same time being comfortable and contented. With this in mind I would like to contribute some thoughts in reply to a story in a recent issue.

The authors stated that they kept a cat. They then listed a variety of native wildlife that this moggy would no doubt be destroying. It has been calculated that the average domestic cat kills one animal every day. The average

domestic rural cat would be responsible for more. No matter how much a cat is fed it will still hunt. Generations of domestication have not removed this feline instinct. The RSPCA estimates there are at least 20 million moggies in Australia and half of these would be pets. Allowing one mother cat four female kittens a year (a conservative estimate!) it's possible for it to produce 1.86 million female descendants in 10 years. Studies undertaken on feral cats in Eastern Victoria indicate that their main prey are small mammals, including varieties of gliders, ringtails, brushtails, marsupial mice and rats, bandicoots, bats, lizards and bird species too numerous to list. A single cat can decimate hundreds or thousands of native animals in its lifetime. If we let dogs loose to roam the bush at night there would be a huge outcry in defence of the wallabies and roos. Cats, unlike dogs, are difficult to confine and control, and are therefore inappropriate pets — especially in country areas.

We call ourselves environmentally aware, but close our eyes to the toll our moggies take on the native animals. Denying, or excusing our cats' contribution to destroying the Australian bush is irresponsible and selfish.

When used as rodent eliminators, cats can be useful. But there is another method of killing mice that is much more 'target specific' costs nothing to keep, does not torture the mouse for fun, and requires one to two minutes of minimal effort each day . . . the humble mouse trap. The four-sided models are the best, as they aren't so likely to attract small birds or lizards who may visit the kitchen.

Having a great affection for non-human animals, I am very aware of the difficulty of parting with a four-legged friend, especially an old one. If that decision is too hard to make — how about a pledge to not replace your present cat when it finally pegs out? Meanwhile, give it a bell to wear and confine it indoors at night.

If I have offended anyone by this strongly-worded letter, I am not at all sorry. I believe it is much more

offensive to be an accomplice to the crime of annihilating local populations of native fauna.

May we all learn to tread more gently on the earth. Bye for now,
Jill Redwood, Goongerah, Victoria.

NSW community

Dear readers,

The Glenfield Goodwill Co-operative Ltd was formed in August 1972 as a community advancement co-operative in order to acquire and develop Glenfield Farm in accordance with the following objects:

- To restore as far as possible and maintain in reasonable condition the historic buildings known as Glenfield Farm.
- To maintain the buildings and the surrounding land as a centre for gathering together people and organisations of goodwill to encourage mutual understanding and co-operation between peoples internationally and inter-racially.
- To maintain on natural lines and by organic methods small farming activities, a market garden and a garden market for distributing the produce of such activities.
- To make donations, gifts, and loans of money and other property for the benefit of Aboriginal or part-Aboriginal people and otherwise in furtherance of the objects of the society.
- To apply the nett income and property of the society solely to the promotion of the above objects.
- To operate the society as far as is practicable on a community sustenance basis, employing labour only when essential, and at a remuneration not exceeding the minimum wage.

Membership of the co-operative is open to anyone who agrees with these objectives and wishes to take an active role in the continuing development of the farm. Shares in the co-operative are \$5 each, and there is an annual administration fee of \$10. A member may own up to \$20 worth of the co-operative's shares, but all full shareholders of 18 years of age or over have the same voting power: one vote.

A quarterly newsletter is ed-

ited by the residents to keep interested people informed about what happens at Glenfield Farm. The newsletter reports on the people living here, on the organic farming, and on the weekend events held recently. It also discusses any seminars and events planned for the coming weekends, and the progress of any projects being attempted.

Any person wishing to become a member of the co-operative should write to:

The Treasurer, Glenfield Goodwill Co-operative Ltd, Glenfield Farm, Leacock's Lane, Casula, NSW, 2170.

Zeolite fridge interest

Dear Camille and Alan,

Would Kris Jacques of South Grafton, New South Wales, still have the photocopy from *Mechanix Illustrated* of a zeolite fridge and if so could he please send me a copy. I would be prepared to pay cost for both these requests. I have misplaced EG 59 and it's driving me mad looking for it. Love to all.

Jean Hilliard, 86/259 Malvern Rd, South Yarra, 3141, Victoria.

British organic produce supply

Dear Fellow Greens,

Greetings from like-minded comrades in the UK. I am writing to you for information concerning organic food production in Australia. I was given the name and address of the Green Alliance Network by the office of the Green Party here in London. Although I am not familiar with the Network I'm hoping this can be circulated to all Green-minded individuals in Australia.

I am an active member of the UK Green Party, and I have recently begun to work with a 'green' distributor of organically grown foods based in London. We are looking to expand our range of suppliers — especially of fresh organically grown fruit and vegetables. A significant and growing market for organic foods exists among the health conscious in the UK and Europe, but supplies are not always easy to obtain.

At certain times of the year (our winter/your summer) organically grown grapes and melons, which are luxury items for us English Greens, are available only from South Africa, a country from which we will not buy at the present time. Conventional chemically-grown fruit is available from many southern hemispheric countries of course, including Australia. Is there anyone who knows of any organic growers in Australia who would be prepared to export fresh organically grown fruit to the UK? Although it is very expensive to transport goods from Australia, the unavailability of certain products in the UK at certain times of the year makes this option very feasible and not entirely un-green. All of the products we sell must be free of the residue of herbicide, fungicide, or pesticide of any kind, and must have been grown without the use of artificial chemical fertilisers.

Thank you very much, I look forward to some replies. Sincerely
John Letts, All Organic Company, 39 London Fruit Exchange, Brushfield St, London, E1 6EU.

Forest vegie patch

Dear Earth Garden readers,

Is there anybody out there with first hand experience regarding fruit and vegie patches in relation to forests. My husband and I are at present planning our orchard and vegie patch (1 to 2 acres) and before we clear any land we would appreciate any advice anyone has to offer. Thank you for a wonderful magazine, it provides a lot of incentive. Keep smiling and have a happy day. Yours in anticipation,
Debrah Fisher, PO Box 101, Maclean, NSW, 2463.

The choice was right

When our lives are a success and crowned by a glorious old age we certainly feel great about them. It can be still better even though some struggle may have been involved. And yet, what do we do and feel when disaster strikes midway?

In October 1985, after heavy

aerial spraying in the district, all my Saanen goats got very ill with diarrhoea and sinusitis, one died after two day illness and two others died some months later. The last one to die took the casualty rate of my flock to about 505. It was a pet whether who was much loved. I spent a small fortune in veterinary fees and medication on him, however, the diagnosis was utterly wrong.

While I could not help my inquisitive nature, I carried out a post mortem on my own. There was nothing right in his body. His stomachs were blocked and full of liquid and some food, the heart was much too large, the liver discoloured, the kidneys pulpy, and the bladder burst with the contents still in the abdomen.

When I rang the vet about it I was told the yellow liquid in the abdomen could be discounted. I admit to discounting the veterinary opinion once I read more about stones blocking the urinary outlets of rams. Considering my findings after some days of thinking, I concluded that my poor Paul had a general breakdown of the functioning of his organs.

Why? A few months before his death he was twice so badly affected by agricultural spraydrift that he nearly died anyway.

My next thought was: What about my other animals? What about my own health? Not quite three years later I was told I had stomach cancer.

I had always lived a healthy life, avoided poisons, eaten healthy home grown food, and for ten years I had not eaten any meat because I found my body reacted against it. Also, I must have been rather strong and enduring as I got so much work done.

It did not take me long to remember my goats' deaths. In fact, long before I knew of my cancer problem, I campaigned against the uses of agricultural chemicals. Regarding that, I have been for some time now a thorn in the side of some people in government.

However, when you are told that you have cancer your thoughts go beyond those facts. You know that it is likely that your days are counted. You

also query whether your attitude to living and the environment was right.

Why did I choose an alternative lifestyle? Why did I support all things down to earth? the answer was that I loved Nature at its fullest and felt happy with my garden, the animals, the birds, and the wild animals around. It also made me happy to do my little bit in healing the wounds European settlers inflicted on our landscape. I never regretted it, I still love to see trees conquering a barren landscape.

Next I wondered if I regretted my rather strict diet and life without tobacco, alcohol, recreational drugs and public amusements. No, I never missed any of that either and life without them was so much easier.

I also found that I could not regret fighting for a good cause and hoping for something good. My battles were indeed many. They centred, however, always around something humane. I could not overlook an abused and despised little child or a cat. I could not manage to remain inactive when certain public reserves were to be sold. Most of all I spent a lot of energy fighting for the environment.

Would I have enjoyed myself more if I had centred my efforts on luxuries for myself? Just before I was to be operated on I spread the word of caution against agricultural chemicals.

There was and is a lot wrong with sprays which kill goats, birds, toads, frogs, and (people?). I found my decisions were right. My warnings were perfectly reasonable, there were no regrets.

But what about not winning this last battle against the use of agricultural chemicals? Well, it did not look nice on that operating table and after the operation. Now I say: the battle was never lost, only one soldier was wounded.

He somehow recovered and hopes that all those sharing his views will strengthen their commitment and fight on because the choice was right.

**Armin Ptak, Undalya,
South Australia.**

Seeking advice

Dear Earth Gardeners,

We have been saving for years and within the next 12 months we will be buying our own longed-for piece of paradise 'somewhere' in the country.

We are hoping to be semi-self sufficient but do not want to live more than 30 km from a town. We have two school aged children (one hopefully on the way) so we need to live somewhere with a school and ideally a school bus.

We've been to Tassie, Queensland and New South Wales but still like the New South Wales countryside the best. Our little group still has a lot of travelling to do before we decide where to make our new lives and anyone out there that would like to lend advice please let us know. As a long term investment we like the idea of planting pines so the land would have to suit.

Anyone with expertise or just plain advice on the following please let us know — all letters will be acknowledged given time.

*Growing vegetables and fruit trees.

*Planting and maintenance of pines.

*Advice on breeding deer, goats (also milking and how to look after)

*Any suggestions.

*Recycling of used paper.

Thanks for the great magazine.

Yours faithfully,

**Jenny Costendole, 23 Aurora Drive,
Tregear, New South Wales, 2770.**

Bush lemon skins

Dear Camille and Alan,

I started with EG 54, which I found in the local newsagency, and wish I'd found it earlier. I wonder if someone can help with a small problem. I have a magnificent bush lemon which has huge lemons with thick oily skins and I wondered if anyone has any ideas for the use of the skins. My family doesn't like lemon peel in cooking so it's not much use drying it for that purpose but there must be something it's useful for.

Yours sincerely,

**Margaret Hicks, c/o Mt Driven, St
George, Queensland, 4487.**

Making a move with Angoras

by Judy Sims

Windeyer, New South Wales.

IT'S DIFFICULT to believe that in little over twelve months my husband and I have been transformed from city dwellers to the more traditional role of farmers. It was an enormous step for us to take, risking all we own on a move to the country.

Like many readers, we dreamt of buying a property, living off the land, and taking an active role in developing our future. What was this future to be? We knew the chances of securing good jobs would be slim, so we felt the only way to survive was to work the property itself. We investigated numerous farm livelihoods: cropping, orchards, deer, fish, nurseries and we finally chose the Angora goat industry.

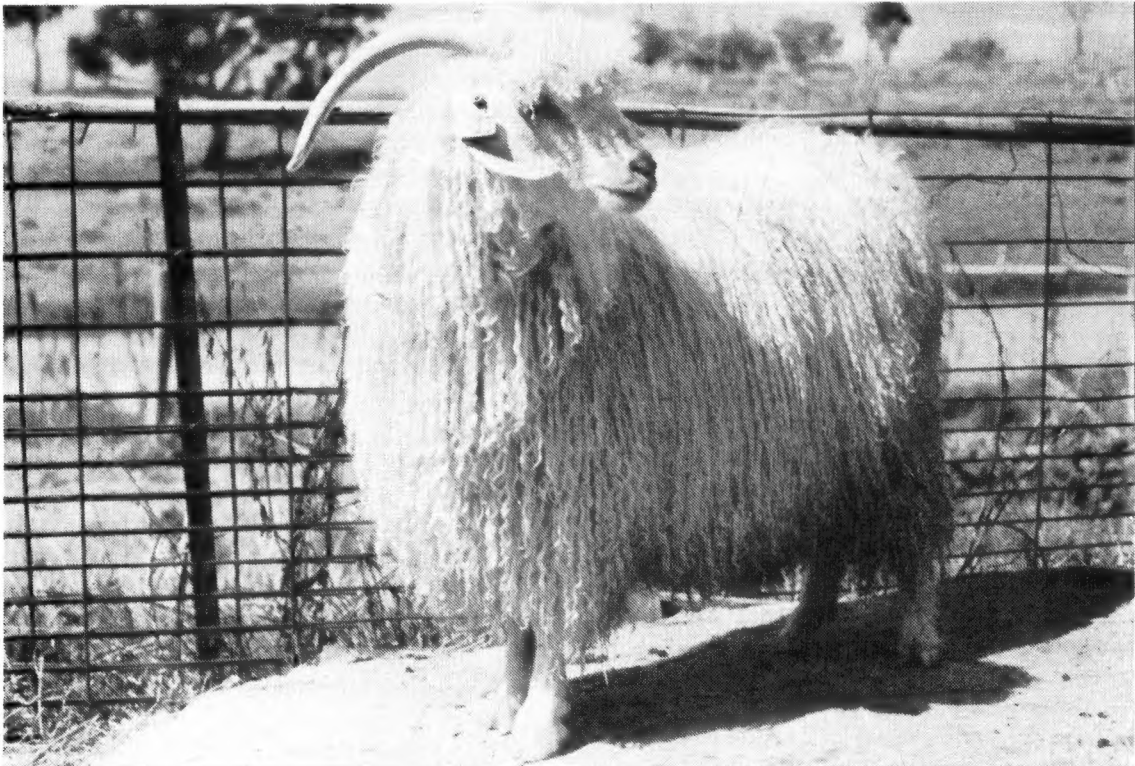
Why goats? Well, our choice surprised even us, having never seen an Angora before. Our first encounter with an Angora goat was at a stud in Grafton, and it sealed our fate. The goats were smaller than we had imagined, and covered with the most beautiful long ringlets of mohair. Two dark eyes peered up intently through a fringe of curls. They looked just like fluffy mohair rugs on four feet, and were absolutely adorable.

Finding the right farm

Next we began searching for a suitable property. In March 1987 we found what we were looking for: a 93 acre farm at Windeyer near Mudgee, New South Wales, which has an annual rainfall of 650 mm. The district is well renowned as a fine to superfine wool-growing area, and the undulating to hilly rocky terrain is ideal for goats. Unfortunately the whole property was very run down because it had been left vacant for two years before we moved in.

The first job was a vendetta to rid the house of rats. There were rats in the roof (they sounded more like elephants), rats in the rooms, and rats in the cupboards — nowhere was safe. I spent the first night cringing in the fortified bedroom, towels scattered around covering the numerous holes. Outside was no better. The front paddock had been used as a garbage tip, fences were falling down, and not a single gate worked — it was easier to climb over them. We spent the entire first six weeks making the house and its surrounds habitable again. It was a far cry from the beautiful home we had designed and built back in Sydney.

Once the house was in a reasonable condition we began to tackle the fences in readiness for our first stock. The property formerly ran sheep and had also run a few goats. However, we still had to adapt the fences because it was all very dilapidated, and the goats found it easy to escape.



One of Judy's outstanding young Angora bucks: "Rebroff Rambo".

Fortunately it turned out that once the goats were accustomed to their new paddocks, they became very territorial. Now, on the odd occasion that any find their way into a paddock they shouldn't be in, a few shouts (or the mere sight of us) send them scampering back through the hole, looking very guilty.

We anticipate running a total of 100 breeding does once we are established. This could mean running anything up to 300 goats of various ages at any one time. Our land is capable of carrying two to three goats per acre on pasture, and anyone intending to run Angora goats should be wary of inflated figures of up to 15 goats per acre. When buying a property, check what the DSE (Dry Sheep Equivalent) is, then add one third for the goat equivalent. Stocking animals above realistic levels will mean heavy hand-feeding, more work, an increased risk of health problems, and extra expenses.

We were lucky that there was an abundance of feed left on our property, and even now the goats are still thriving on the natural unimproved pasture, which they relish. The blackberries and thistles are rapidly vanishing, and the paddock conditions are continually improving. Within three months of moving in we had acquired 130 goats, half being does in kid. We couldn't afford to waste time in setting up our herd, as we aim to be able to support ourselves fully within a couple of years. Even the locals were surprised to see us act so quickly, considering our total lack of experience in goat farming.

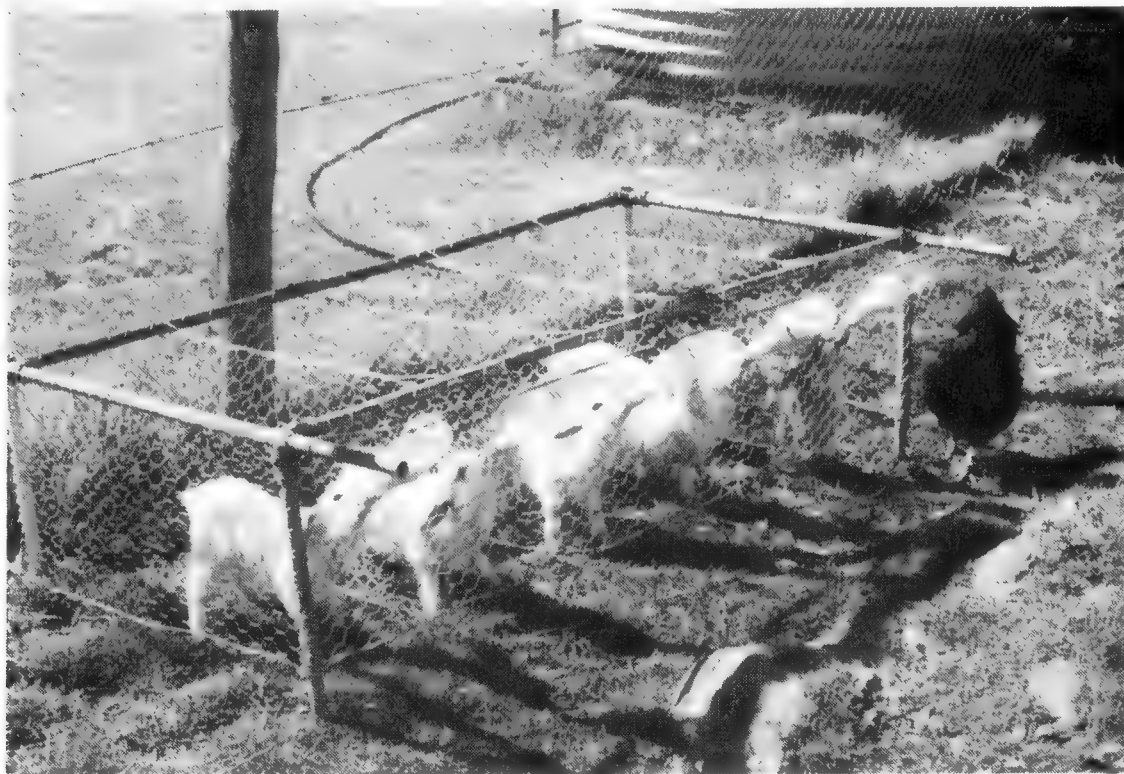
Learning the ropes

Our knowledge on Angora goats has grown by attending stud auctions to develop an 'eye' for the animals, inspecting various stud properties, and constant reading. Books were a valuable source of information, and in the first year we referred to them constantly. A particularly useful book is Pat Coleby's *Australian Goat Husbandry* (available from Night Owl Publishers, PO Box 764, Shepparton, Victoria, 3630, for \$8.50 post paid).

We are lucky that there are several other Angora studs in our vicinity which have given some assistance and advice. Generally speaking, most goat breeders are willing to help you, but there is still a reasonable amount of rivalry between the various studs. Currently we have a total of 220 Angora goats, both stud and commercial, along with a small number of coloured Angoras, which are more of a hobby.

Goats are intelligent animals, and quickly respond to your attention. They are curious, friendly, and love watching you work. We have found them easy to manage, and can muster them simply with a feed bucket — most effective.

Angora kids must be among the most delightful of all baby animals. They love playing together in groups, climbing logs and stumps, and nibbling your trousers if they can get away with it. We watched in awe when our first doe gave birth to twins — the beginning of a very long kidding season. All up we had 80 odd kids spread over six months. The combined kidding percentage for the commercial and



The five-at-a-time poddy feeder being put to good use while a chook looks on.

stud does was 149 percent, which thrilled us for the first year.

Things did not always run smoothly though, in fact, anything that could go wrong did so. It seemed that every goat problem you could dream of occurred to our goats. We had goats with dermatitis due to a wet spell after shearing, our best stud doe came down with the potentially fatal pregnancy toxæmia (Twin Lambing Sickness), there were problems with vitamin deficiencies in some newly acquired does, a few of the older does needed manual help in kidding, and to top it off, a bout of scouring took hold during weaning.

Our large chookyard had to double as a nursery for poddy kids. The chooks and kids actually mixed very well, but it was quite a sight. Bottle feeding was time-consuming, but after we constructed a five-at-a-time poddy feeder, it became more manageable.

The Angoras are shorn twice yearly. My husband undertook to do the shearing himself last time, and is quick to point out that it's not as easy as it looks. He found the little ones being shorn for the first time were very wriggly, not to mention hard on the eardrums. After shearing 170 goats his technique has greatly improved.

Other goat husbandry includes feet trimming. Usually all Angoras need this done regularly depending on the terrain. Even though our property has rocky outcrops, we still need to trim their feet two to three times a year. To do this easily, we constructed a handler which swings the goat up off its feet into a position where it's lying on its back with all feet pointing up. The goats are remarkably relaxed in this position, and I have even seen them doze off as we work.

Bright future for industry

For those of you still contemplating your future, don't overlook Angora goats. We have taken the challenge, and are looking forward to breeding and improving our goats. Embryo transfer is a concept we hope to employ next year, and the genetic gains made possible by this method make the future of this industry look very exciting. We believe there is a good future for mohair, and, being a relatively undeveloped industry, there is still considerable room for improvement. Newcomers who are diligent in their breeding practices have much to contribute to this developing industry.

At the moment mohair sales have been sluggish, but this has mainly been on the adult and low grade fleeces, both of which are far coarser than kid mohair. With the current high wool prices, it may be only a matter of time before manufacturers realise the value of quality mohair at a more realistic price. Markets for agricultural products have always see-sawed between highs and lows and mohair is no exception.

Because the price of mohair is depressed, many breeders are dumping their stock, forcing a glut of goats on the market at low prices. If there was ever a good time to buy Angora goats, now is the time. We have certainly not looked back since we made our break from the city. We love our place in the country, and our goats, many of whom we recognise by sight and name. To live in the country and do something you really enjoy is a very satisfying and rewarding experience.

Let there be light

by Julia Todd Forbes

Oratia, New Zealand.

IN 1969 we bought — or rather, started paying off the mortgage on — a 15 acre property that was half beautiful native bush. The other half had once been cleared but had grown up in gorse, and all of it was a series of steep gullies that dropped 200 feet from road level to the back boundary.

It 'lay to the sun' as the agent said, so the northern winter sun made it hot even in midwinter after a frosty clear night. It was sheltered from the winds by the bush on the west and by pines on the north east boundary.

The gorse had grown untroubled and much of it was 20 to 30 cm in diameter. Al cleared this with a hand saw and piled it into huge heaps which, after two or three years, became beautiful compost. (Burning gorse merely ensures a tenfold increase next year). We lived in a tent while clearing the gorse and building a 8 metre X 8 metre cabin at the bottom where the land levelled off. This land also

became a swamp between the cabin and the back boundary fed by a runoff stream from the bush.

Electricity

These activities took us a year and we then asked about getting electricity into our completed 'house'. The price turned out to involve putting in power poles at our expense — and they wouldn't let us do it ourselves. They wanted hundreds of dollars before they even started the job and so we said thanks but no thanks. We made do with kerosene lamps and used a wood stove for cooking and heating with the wood harvested on the property. We found a spring and drained off the swampy area. We did this by digging out the spring and taming it with a heavy one inch diameter polythene pipe leading to a bath tub with a ditch for the overflow leading to the runoff stream.

As soon as we had cleared enough gorse to reveal some pasture, we bought a herd of Saanen goats. At first, we had to tether them until we built some internal fences. (We'd spent nearly a year putting in the boundary fences before

we'd moved up there into the tent, and already had a Jersey heifer — she was tethered too, at first.) We also acquired chooks and free-range bantams.

Goat sickness

Our goats didn't do well and it was nearly two years before we found out why they inexplicably died, the kids broke legs, and the amount of milk the does gave was minimal. We discovered that a previous owner of the sheep farm — not the one we bought from — had become over-enthusiastic about top-dressing the land with molybdenum, a practice that was advised all over New Zealand as a remedy for 'bush sickness' affecting grazing animals. Only a very small amount of molybdenum is required but that long-ago owner had figured that if a little was good, a lot would be better and he'd put a massive amount of the chemical on the land, rendering the grass growth nearly poisonous to the animals. The effect of too much is to make the iron non-assimilable and this meant the animals couldn't use the copper they needed. It leads to anaemia, scours, general poor health and lack of proper bone formation in the young. It affects cows the least, sheep to some extent (the previous farmer couldn't fatten sheep but had to sell them as 'stores'), but is really lethal to goats.

Our pedigree herd of 20, soon augmented by the birth of kids, was depleted by deaths we couldn't explain. By the time we found out what the trouble was, we had only a dozen goats left and they were not in good health even

though we were able to keep them alive by daily doses of dissolved blue-stone in measured amounts.

Reluctantly, because we loved them and they are beautiful animals, we decided to sell them and at least had the satisfaction of finding that, with their new owners on good land, they immediately recovered, their milk increased in volume, and the kids were the usual frolicking creatures no longer plagued by broken legs. We kept the heifer's water supply in copper tubs and that was enough to keep her healthy and by now she was supplying us with milk and calves. Next we bought 'proper' chooks instead of bantams, converted the goat house into a chicken house and got on with the garden to become as self-sufficient as possible.

We also fattened weaner pigs and did our own butchering as we had long ago decided against buying any meat from the butcher. This decision was made when, soon after buying the property, we'd subscribed to the two farming magazines here and had been appalled at the number and nature of chemicals that were added to the food, sprayed on the coats, injected into the bodies (or mouths with a dosing gun) of the helpless farm animals all in the name of increasing their production of milk, meat, and wool and decreasing the time it took to do so.

We decided we wanted to eat no part of these chemically-raised animals and would eat no more meat except that which we raised and butchered ourselves. That was nearly 20 years ago and we've never changed our minds.

We tried to make everything, do everything we



Julia's partner, Al, made this ingenious 'two- person' cross cut saw, using rubber bands cut from old truck tyre inner tubes — and operated it singlehandedly.

could ourselves, and not be dependent on the consumer society — of course I baked our bread and all baked goods, and no cellophane or plastic-wrapped foods came into our house. I made pretty good cottage cheese and cream cheese but I never mastered the art of making hard cheese. We made our own soap which we used for everything from shampoo to laundry (did you ever notice the range of soap products in the average supermarket trolley? — not for us!).

We make ours with vegetable oil (coconut) as it dissolves and rinses out easily in lukewarm or even cold water and this was important because our laundry was rinsed in a double laundry tub (with a hand-turned wringer between the tubs). And this was done with water direct from the spring that was cool to downright cold! No one ever had a laundry with a better view: the bush to my right and the cleared hills and gullies with contented cows grazing in every other direction.

Soap venture

Our friends liked our soap when we gave them some because it had no perfume or artificial colour — it was the purest white. So we began selling it and eventually it was available in all the health stores and outlets in New Zealand. Vegeol Pearl Soap, it was called, and making it was a long process. The kettles of soap had to stay at boiling temperature for three days. Al built a heavily insulated soap boiler into which fitted four kettles (each kettle held enough to make 60 cakes of soap) and, once the tank of water in its base was heated up to boiling temperature, the soap could be kept at that temperature as long as we liked.

The 'fire' which heated the water in the tank (with copper tubing spiralling around the inside wall to the top of the insulated soap boiler to carry the steam from the tank up and out where it condensed as water into a receptacle), was a small kerosene lamp which had to be lit and kept going for three days before steam appeared from the end of the copper tubing.

It was a very efficient and cheap-to-run boiler and, in between making batches of soap, it became a very efficient machine for bottling everything from fruit and vegetables to meat and fish. Although today people are told that you can't bottle meat or other non-acid foods like string beans without using a pressure cooker, the old-fashioned way of bottling these things required only that you keep such products at boiling temperature for three hours, and is perfectly safe.

The only trouble is that most people do not have facilities for doing more than six or seven quart jars at a time, which makes the process take far too many days if you have a lot of bottling to do. In the bottom of our soap boiler, we could put 36 jars at once.

It's lucky we found additional use for the boiler because the soap was not our best cottage industry. It took a lot of time and had to be packaged and we couldn't charge enough for our time without pricing it off the market.

Cottage industry

Our best product was a true giant of a paper clip which we called 'Jiant Paper Clips' and had produced before we bought our property. Al, seeing a need for a really big clip that would lie flat and file papers neatly (unlike the old style bull-dog clip which was so bulky), designed one by scaling up all the dimensions of an ordinary small paper clip except the diameter of the wire used. He then designed and built a machine to make them on — worked by pedal power — and my job was to sort and package them after the properly formed clips had come back from the galvaniser in great sacks with the clips all entangled in a mass.

Everyone who saw these giant clips thought them a great idea and wanted some but, a word of caution to would-be entrepreneurs of a new product: the people who sell such things, the retailers, will on no account buy very much of a new product until their customers start asking for it. We had four wholesalers who made the clips available to the stationery stores but sales were few and far between for our neatly packed cartons of 50 boxes of 20 clips each.

So, in September of 1976, we embarked on a promotion which cost us very little more than time and a few 1000 clips. We had a card printed with a picture of the box of clips and headed 'The Jiant Clip with 1001 Uses' and some of these uses listed below for home, for office and for schools. An 'order blank' on thinner paper to be "given to your stationery supplier" was clipped to the card with one of our Jiant Paper Clips.

Armed with a large box of these, Al then went to downtown Auckland and, starting at the top floor of every office building in the area, gave away our promotional package at the reception desk of every office in the building. This took ten days of intensive work and was well received — no problems or complaints from the building managers. We also sent the same promotional package to virtually every school in New Zealand — I was addressing envelopes at home while Al gave out the ones to offices in Auckland.

The response was immediate: orders from the wholesalers began to come in and where one wholesaler had ordered one carton every three or four months, they now ordered four cartons at a time and ordered every month. This wasn't just a brief flurry as orders have continued to increase in number and amount ever since. You see, a 'better mousetrap' will not alone cause people to beat a path to your door — you have to make known what you have to sell, to create a demand for your mousetraps and let people know where to get them. Otherwise you'll end up with a lot of better mousetraps and very few sales. Fortunately we could, at very little expense, put our product into the hands of potential customers for nothing — you'd have to work out a different scheme for a large and expensive product.

Part II of Julia's story will appear in the next issue of Earth Garden.

Donkey Training Part II

Snigging.

by Marja Fitzgerald

Mongogarie, New South Wales.

IF YOU want to use your donkey for snigging (dragging) timber or any other reasonable loads, you will need a snigging harness. This consists of a neck strap, a breast plate, traces (preferably of chain) and a swingle bar. These items are illustrated in the illustration below. I made my own harness except for the swingle bar. A donkey-sized swingle bar can be made from a 50 cm (20 inch) length of iron pipe.

Many people advocate driving the snigging donkey from behind with long reins. This method has many advantages; for one, you can see better where the load is going. However, to my mind it is a little more dangerous, because long reining while walking beside the load (post, sled, branch or whatever) means you have to watch too many things at once. You could trip over the load, which might panic the donkey if she's still learning, and could result in injury. So the only time I long rein is when returning an empty sled to the house. Then I enjoy sitting on an upturned bucket on the sled and driving Matilda. She enjoys it too; the weight is light, and she seems to like the thought of pulling one of her two loved humans.

Before you attempt snigging, you will have taught your donkey commands, "Walk on", "Whoa!" and a turning command (or commands). You will have practised these while leading from the shoulder, and both short and long reining (see previous article in EG 61). One last command she needs to learn is "Stand". It is easy to teach: say "Stand!" as you begin to brush her. Make it a short brush, and praise her afterwards if she stood well. Matilda has learnt to

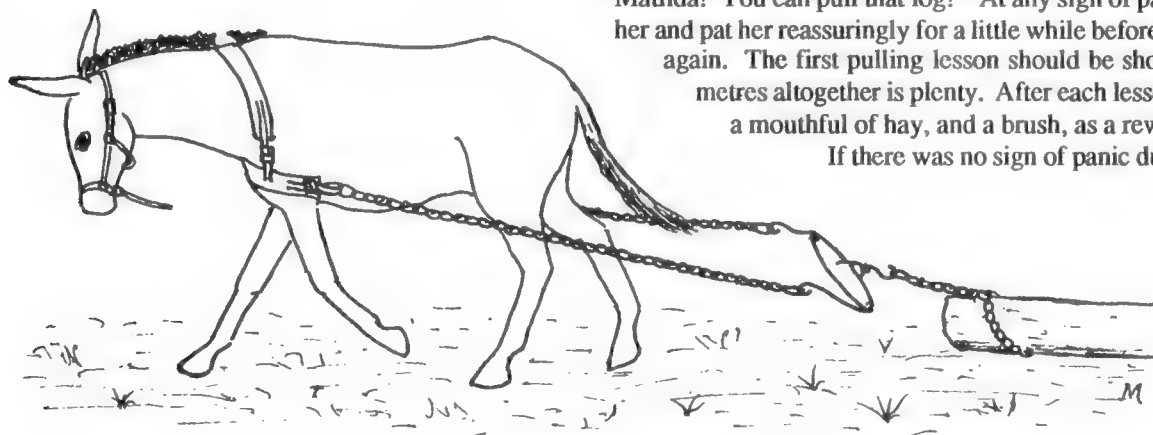
"Stand" so well that we have to make sure we move her when we've finished, or she'll stand for hours!

The first step in snigging is to get your donkey used to her harness. Before putting it on her, let her sniff it, and then gently flap the chains and straps against her; especially on her neck, back, tummy and legs. Next, tie her to a post, put the harness on her and stand behind her with the traces in your hands. Leave the swingle bar out for now. Move the chain traces gently up and down her legs till she is totally calm about it. Repeat this in the next lesson, then tauten the chains to put a couple of kg pressure on the breastplate. Do this a number of times, increasing pressure gradually to 10 kg or so, and if she handles this calmly, proceed to the next stage — otherwise continue the procedure till she is calm about it. In her next lesson, have a friend lead her while you hold the traces behind her, putting gradually more weight on them. Praise her lavishly as she pulls against the weight.

Now she's ready for pulling an object. Hitch her up to a little log or a fence post (about the weight of a fence post) and lead her forward. As the traces straighten and the weight comes on, say, "Pull Matilda!" (insert her own name, of course!) and if she moves the post even a foot, praise her thoroughly. If she pulls and keeps pulling, praise her well but stop her after two or three metres, and praise her again. The reason you stop her is that donkeys panic at first when they hear something coming behind. Stop and start her a number of times, giving praise each time and bikkie treats some of the time to add interest.

Now she should be ready for a longer pull: encourage her to keep going, but watch her eyes and ears closely for any signs of panic, and praise her constantly as she pulls. Use praise to make her feel important — she will understand a lot of what you say. Something like, "What a clever donkey Matilda! You can pull that log!" At any sign of panic stop her and pat her reassuringly for a little while before starting again. The first pulling lesson should be short — 20 metres altogether is plenty. After each lesson I give a mouthful of hay, and a brush, as a reward.

If there was no sign of panic during the



A snigging harness in use.

first pulling lesson, you can increase the length of the second pull. Perhaps there's a little log of firewood you want to pull up to the house, weighing no more than 1 1/2 fence posts. Or a fence post you need to move to a particular place. Donkeys love to be useful, so the sooner you can get her doing 'real' work the happier she'll be.

Once your donkey is happily pulling posts you can introduce her to branches. Branches are more scary to pull, because they are noisier and stick out more. The first time, lead her with one hand and pull a small rusty branch in the other. If that doesn't worry her, pull a bigger one next time. If that makes her nervous, repeat till she becomes blasé about branches beside her. Once she's unconcerned, tie a length of rope to a branch and pull it along behind both of you as you lead her. Do this till she's unconcerned: once may be enough. The next time attach her to the branch. It should present no problems.

From here it is a simple step to pulling a sled. When you've made your sled, leave it around where your donkey

will see it. When she's nearby pull it a few metres yourself so she can see it in motion. Encourage her to inspect it by putting a mouthful of hay on the edge of it. The first time you get her to pull it, only put a light load on. Then gradually build up to a weight she can pull comfortably — if she's straining, it's too heavy. The first time I attached the sled to Matilda, I was more nervous than she was — she accepted it with no concern at all. Matilda is a solidly-built 11.2hh donkey, and can pull one adult on the sled easily, and two adults on flat ground without strain. This will give you some idea of what a donkey can do. She can also snig a 2.2 metre (7') round corner post, though uphill it is a bit of a challenge — we don't ask her to do it very often.

Matilda is very useful to us on our farm. She pulls fence posts, firewood, her sled with water and compost for tree planting, and carries her wood-bag full of various things (sometimes even wood!). She also gives visiting children rides while we lead her. On top of all this she is entertaining and a very lovable friend.

Whatever happened to taste?

by Arthur Brotheridge

Devonport, Tasmania.

I WOULD like to discuss some of the values that need to be preserved as long as we intend to encourage a self-sufficient lifestyle. The freedom of the country life, the fresh air and being able to work outdoors, the companionship of animals and birds, the friendship of neighbours, and perhaps the longing to be part of a community, are all qualities to be treasured. However, the inescapable responsibility of production of your own food is never ending, and to maintain interest for a lifetime, I believe it is vital to aim at growing the best, and to value the quality of your own production. The distances can be very great between the finest of the fruit, and the poorest that is often offered for sale as all that is available.

How often do people say, or hear it said, "It doesn't taste like it used to." I have seen letters to the papers on this matter. Once a woman wrote to *The Australian* to ask where she could get fruit which was sweet and juicy. A reply some time later said that she was unlikely to be able to do so, because most produce available was not only unripe when picked, it was often not even fully mature.

Years ago more produce was consumed nearer to the place of production. It was picked nearer to ripe and sold in quick time. Now there are larger orchards and growing areas, further from population centres, often using mechanical harvesters. This usually involves vigorous shaking of the tree, and a fall of some distance, hopefully onto a canvas catching screen, journeys up rollers and through grading

machines, washing and drying, and these days waxing too, then into cool stores for varying periods.

There will, of course, always be some people selling fruit in the perfect state, but it will only be on a very small scale in proportion to total sales. Many of the later varieties of apples being developed (often on the largest scale) are not being produced for your enjoyment but because they look nice on the shop display counter, travel well, keep well and make money for the grower, distributor and shopkeeper, and not always in fair proportions for the ones who actually grow them. If they have some flavour that's a bonus but is not essential.

From a recent article by Max Harris in *The Australian* regarding our failure to supply the Asian market we read: "The (Red Delicious of) Washington (State) apple is large, dimpled, polished, uniform, pretty and tastes awful," and again from New York's most widely read paper, *The Daily News*: "Apples, apples everywhere and hardly a one to eat. The big red and yellow plastic spheres waiting in the market for the unsuspecting, are so suspiciously, so blatantly, thick skinned and shiny, it's easy to pass on by. What we must live on is the memory of what a good apple tastes like. Some people, steeped in nostalgia pretend that home grown McIntosh are still worth eating . . ."

There were other good apples in ample supply too. Pippins and Spys and Baldwins. They were small and dully burnished, quixotic in colour and taste, and brought to town in their brief autumn time so city folks could share in nature's good rhythm. But this was before merchandisers determined to destroy the seasons. The attempt to breed a fruit for all seasons has resulted in a mediocre mush that doesn't

satisfy anyone's palate. Nature's seasonal laws have been defied and we're being punished; go to your room and eat a Red Delicious.

The object has been to create an apple that is artificial enough to remain rigid on the stall and that will travel as long and as far as possible. This has meant breeding out the living, changing, peculiar character of the apple in order that it may go anonymously from one city to the next, always perfectly pressed and polished. These apples have been lobotomised and have fallen too far from the tree.

In the *Bulletin* of 28/4/81 is an article on French apples: "2000 varieties could disappear because officials are encouraging the Golden Delicious. Only 20 French apples, many of them of Golden Delicious origin, can be marketed in France under strict Ministry of Agriculture supervision and the commercial marketing of hundreds of old varieties is now technically forbidden.

Taste appears to be fairly unimportant in French marketing. Golden Delicious sells well because of its uniform size and clear skin. There is also a good technical

reason for growing the apple, its stalk is long and strong, lessening the chance of windfalls. At France's experimental nursery researchers say that many better tasting apples have been produced but they will never be marketed because of natural blemishes. "We have no choice", a scientist said,

"The producer wants beautiful apples, the customer wants beautiful apples, and we have to give them what they want."

About three years ago I visited a retired orchardist friend then growing a few acres of Golden Delicious, and on the last day of April I was able to 'scrag' (pick the odd apple left by the pickers) three boxes of the most perfect Golden Delicious. The main crop had been picked six

weeks before and put into cool store. It was in fact never used because it developed a core rot and several hundred cases were thrown away.

Tomatoes

The tomato is an equal victim to have suffered loss of flavour in the search for a multipurpose article. In a Countrywide ABC TV programme a few years ago Queensland cane growers were unable to sell their cane and were advised by the Department of Agriculture to go into tomato growing, which they did on a large scale, using machines costing \$140,000 each for picking, and ignoring the fact that they completely undercut other regular growers. The machines allowed four or six pickers to ride below outstretched booms, between the rows, and almost lying on the ground and able to pick tomatoes as they went past the plants. I wonder how many viewers noticed that only the greenest were put on the conveyor belts on a journey up and across, and into bins to be graded and packed and no doubt, gas ripened. All fruit with any colour at all, an indication that they had started the natural ripening process, and would perhaps have some flavour (depending on variety) were dropped on the ground: no place in the system for these.

Michael Boddy in *The Australian* says "Any of you who grow tomatoes will know that there is a moment when a tomato stops being hard and green and turns pale white/green and starts to soften and ripen on the vine. The tomato can be picked and will ripen off the vine but if it is still hard green it won't. Commercial growers who pick many tomatoes when they are still hard green so they will transport easily, subject these green tomatoes to ethylene gas which colours them up to pink and red.

They can fool you at first glance. But there is no way these chalky textured, hard gas coloured objects can be called ripe. They are flavourless, have hard skins, and none of that taste-nudging smell of a properly ripe tomato."

I had the opportunity to trial grow a new strain of

"Go to your room and eat a Red Delicious!"

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plum tomatoes. When harvested they tasted of nothing, absolutely nothing. I pointed this out to a grower, and he, may his soul rest easy, pointed out back to me, that the reason for growing tomatoes was to make a living not to give people enjoyable food, should that interfere with the process. "You are a poet, not a businessman," he added gratuitously.

My own experience of tomato growing confirms the need to supply under ripe produce. For over 20 years I grew outdoor tomatoes, but under glass cloches they were earlier and in demand. They were *Rouge de Marmande* — still one of the best flavoured. I picked only those which had actually started to turn pink on the bottom end. In warmer weather they coloured so fast when picking alternate days some were always well coloured. Packing involved filling a box with the firmest, then the next with more colour until all were packed. The last two or three cases were fully ripe, the most perfect fruit it was possible to get.

The wholesaler would only pay me sauce price for these — perhaps \$1 a case instead of \$6 or \$8 for the firmer ones. I packed up growing because it became uneconomic to spend time on them. Whereas in the first few years a plant was worth 10 s/- (\$1) or equal to a person's skilled labour for an hour, after 20 years they still made no more than \$1 which was then worth about 10 minutes of someone's work time.

With low prices for all primary produce, *when related to wages*, sufficiently large quantities to feed the population and achieve economies of scale will only be achieved with lower labour costs, more very expensive mechanical aids, more chemical sprays and fertilisers, and quite possibly in the future, the worst of all: irradiation.

An unknown genius gave this definition to head a section of the National Health and Medical Research Council's Model Food Standards Regulations: "Fruits are the edible, fleshy fructification of plants, distinguished by their sweet, acid and ethereal flavours." And this Homer of the Health Council is right. No one who has ever tasted properly grown pears, peaches, strawberries, raspberries or gooseberries, picked at precisely the right moment and eaten on the spot, can ever forget that delicious mixture of ethereal flavour and fleshy fructification. The sad fact is that most of our children will never have the experience.

I have previously suggested that in the future most Australians will only be able to buy three varieties of apples: Granny Smith, Golden Delicious and the Red Delicious developments (such as Richared, Hi Early) yet even as recently as 1961 the Department of Agriculture published alterations to regulations showing 50 varieties that were sent to mainland States.

I believe that people in Melbourne have a good opportunity to see a fairly wide variety of apples, and also the way in which they can be grafted onto stocks to make dwarf trees: this is done at RipponLea*, and is open to the public.

Tasmania's Department of Agriculture research station at Grove, Huonville, has 400 varieties of apple available to anyone in Australia but only as grafting or

budding wood (free until a few years ago, but last year costing 50 cents for a four bud scion, and a minimum of 20 scions). My last order was for one of each of 28 different varieties. I cut each into two to increase chances of success and, with about four failures, all are likely to fruit within two years. Some will fruit next year and one has fruit this year. I'm looking forward to trying that Pitmaston Pineapple.

I think Tasmanians and cooler parts of the mainland may have an edge as far as flavour goes because I feel that temperate zone fruits have superior flavour to tropical fruits. Queensland visitors once said to me when given fresh picked raspberries and Santa Rosa plums "We never get flavours like this," though of course, the very fact of perfect picking conditions may have accounted for some of this.

There is no doubt in my mind that most Australians will never taste anything but second rate fruit. I try to present to visitors to my property any ripe fruit that is available, and almost without exception they have expressed astonishment at the flavour. There is nothing special about it: just good fruit eaten at the right time.

** Could someone please visit and give me a report on this. I have been not been there. I have gathered this information from several newspaper reports.*

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Fennel Florence

Foeniculum vulgare dulce

by Liz Sinnamon

Kenilworth, Queensland.

FENNEL is a native of the Mediterranean lands and is one of the 'magical' herbs: 'a sure defence against all evil', and with its origin shrouded in mystical legends. The wondrous properties of the leaves and especially the seeds, are found in the folklore of many countries.

Florence fennel is a perennial herb, and should not be confused with sweet fennel, which is a vegetable. The foliage is feathery and light green in colour, the bright yellow flower-umbels bloom in summer and are followed in early autumn by seeds of pale green that dry to a light biscuit colour.

Fennel enjoys a well-limed soil in a sunny spot, is an easy perennial to start from seed, and will grow some 1.5 m high (60 inches). You will get the best results by incorporating generous amounts of compost or well-rotted manure into the soil before planting. Seed should be sown in the spring, although autumn sowing can be done if the climate is not too severe, and the thickened stem base should be ready to use in early spring. Fennel requires plenty of water during dry periods, and the base should be covered with earth when it has swollen to the size of a golf ball.

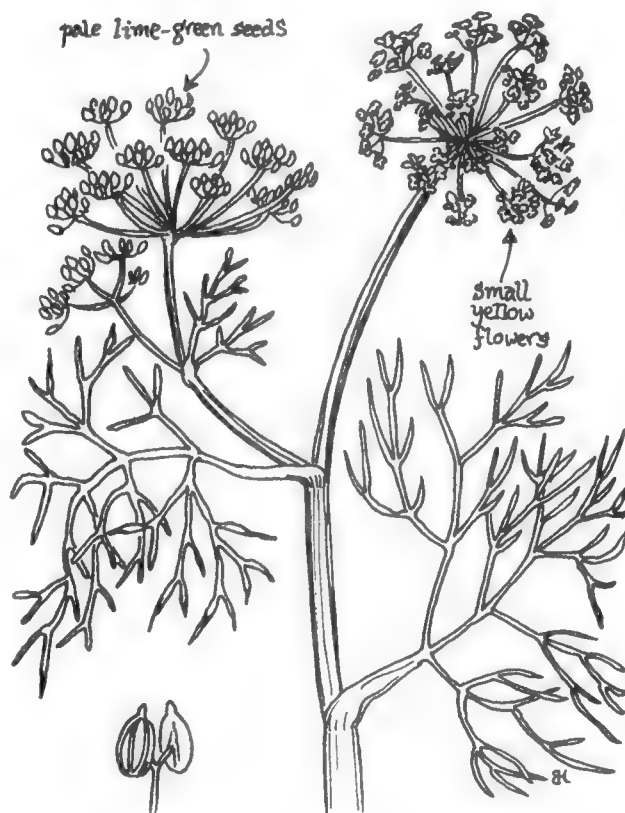
Remove the flower heads as they appear. Cut each one away from the roots, tie them together by the foliage and hang in a dry place until required. It is advisable to use the bulbs within 10 days of cutting, otherwise the fresh, crisp texture is lost.

Cuisine

Fennel leaves are traditionally cooked with fish, and the leaves make a fragrant bed for the fish to rest on during baking. The swollen base can be used either whole or sliced, cooked or raw, in salads or steamed and served with cheese or lemon sauce. Leaves and seeds go well with pork and veal, also in cream and cottage cheese. Seeds assist the assimilation of cabbage, brussels sprouts, broccoli, cauliflower and onions, as well as many root vegetables. Crushed fennel seeds mixed with other herb teas make a very pleasant drink.

Medicinal

Fennel has long been recommended for those who wish to lose weight, and fennel tea can be used for bathing



sore eyes, and relieving flatulence. The leaves and seeds, boiled in barley water, are reputed to increase the milk of nursing mothers, and also make it more wholesome for the child. The tea can be used as a general tonic for the whole system.

Cosmetic

Blend a strong infusion of fennel with honey and buttermilk for a delightful cleansing lotion. Fennel tea can also be used as a skin freshener, and is said to smooth away lines.

Companion planting

Fennel does not help caraway, tomatoes, kohlrabi, or dwarf beans, and will not grow well when planted with coriander or wormwood. Like dill, fennel as a feed supplement for cows and goats will increase their milk supply. Fennel also repels fleas.

Make a pioneer work shirt

by Carolyn Burgess

Armidale, New South Wales.

THE pioneer Australian smock-like shirt I am about to describe is practical, long wearing and easy to sew. I made one for my son when he was four years old and at eight he has just grown out of it — his little brother wears it now.

The reason for its longevity is the use of good quality material and the roominess of the cut. Modern shirts are close cut and have stress points that tear and wear. The loose smock-like shirt is comfortable and does not bind and pull. There was wisdom in the use of similar styles by pioneer Australian and American women. Cloth was precious to them and no more was used in one garment than needed. They knew fuller cut clothes meant less work due to longer wear. No small point when you had to weave your own cloth and hand sew the garment.

Cloth

Good quality material is available in shops at a price, and if you can afford it, fine. If not, consider these options:

- Secondhand sheets. These are sometimes the old twill sheets that wear so well. Use the edges where least wear has occurred and use the rest as rag.
- Thinnish old blankets make thickish shirts.
- Old curtains that are not sun rotted can be fine.
- Women's long dresses. If you are making it for a child a long dress will give the front and back from the skirt, sleeves from the cut-open sleeve and cuffs and collar from the bodice.
- Secondhand table cloths. These make fine shirts, often they are just stained and can be over dyed.
- Bargain and seconds shops are worth regular trips. I keep my eyes open and try to stockpile good shirt materials rather than go looking when I need them.

Pattern

Get an old shirt that has died or just been outgrown. Cut it apart at the seam lines. Do not worry about leaving the seam allowance (SA). Press well. This is your basic pattern. You will need some large sheets of paper, litho is good but newspaper is fine too. Decide where you want the yoke. Cut across the front and back at this point. (see figure 1). Place the yoke section on your paper, trace around it and add SA, usually 2.5 cm, to all seams except the centre front. If the pattern is from an outgrown garment add extra size. Repeat for the back yoke.

Now you need to decide how much fullness you

want in the shirt. All you can do is guesstimate. More fullness for lighter fabric and less for heavy ones. Usually half again the width of the shirt works well. After you have made yours up you can alter the pattern if needs be. Place the shirt bottom front on the paper. Add the amount for the gathers to the centre front. Then add SA. On all other seams add hem allowance at the bottom. Repeat this step for the back of the shirt (see figure 2).

The sleeves need lengthening as well as added fullness. Once again, only making up one will show you how much to add. Seam allowance is needed once again (see figure 3).

Trace around cuffs and collars and add SA. You may wish to alter the collar to a grandfather type, in which case just sew the band. Also cut a front facing as long as you require the front slit, plus 4 cm by 6 cm wide.

Cut out as best you can. This may take some juggling, especially if you use secondhand materials. Another word on economy: it often uses less material if you lay out on a single thickness (not folded) using full pattern pieces.

In the end you should have:

- 1 shirt front
 - 1 shirt back cut on the fold
 - 2 front yokes
 - 2 back yokes
 - front facing
 - 2 sleeves
 - 4 cuffs
 - 2 collars
- you will also need buttons and cotton.

Assembly

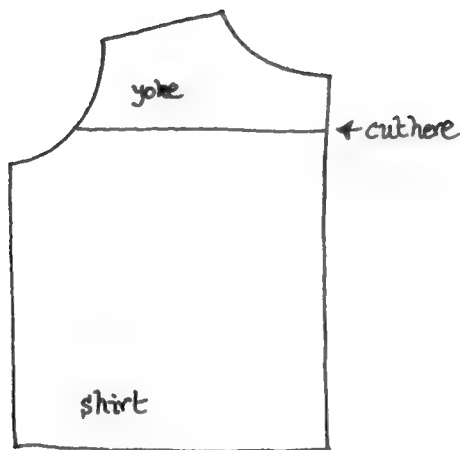
Many good books exist in libraries on how to sew

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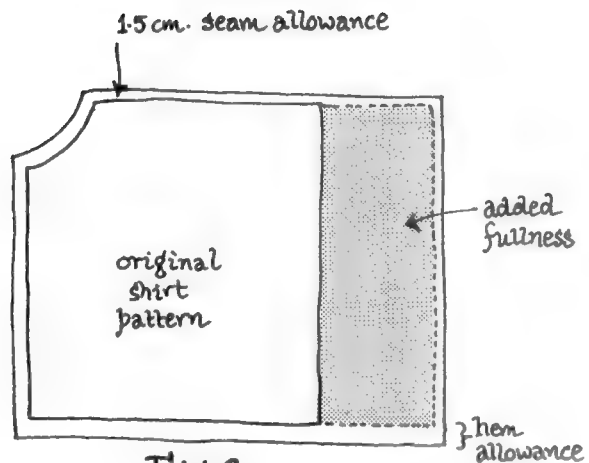
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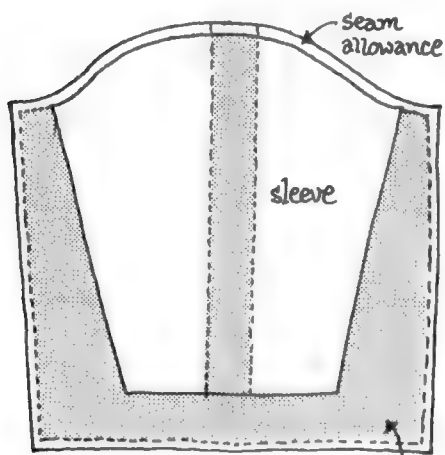
•Fig 1•

Draw in yoke line as desired.

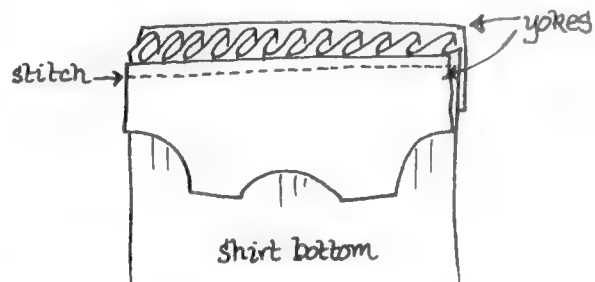


•Fig.2•

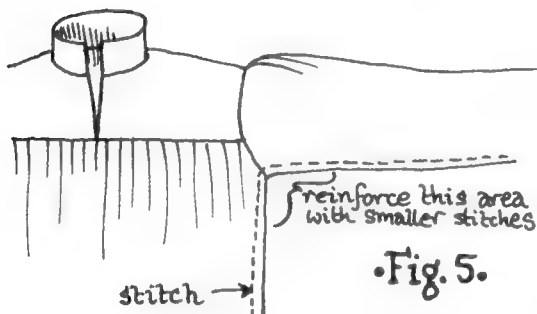
Add fullness, seam allowance and hem allowance.



•Fig.3• Add fullness and length to sleeve.



•Fig 4• Take care with right sides of fabric during this step!



•Fig. 5.

garments. This is basically the same as any smock with a slit front. I have not mentioned interfacing in the collar and cuffs, but you can use it if you wish. You can also use an extra piece of material as an interfacing.

Finish your seams whichever way you prefer: overlocking, zig-zag, pin stitching or pinking are all okay, depending on the type of material. Many of the 'cottons' these days are in fact synthetic and in the majority of cases this causes no problems. However, if you wash with a copper as I do, it can be disastrous. Also, beware if you plan to dye the garment as these threads will often take the dye differently to the material.

These are the steps in assembly.

1. Gather front and back shirt bottoms to fit the yoke. On the front keep the gathers on either side of the centre front.
2. Sew gathered section to the yokes by sandwiching the gathering between the yokes (see figure 4). This gives a good neat finish inside. Grade the layers. This is just trimming the layers to a different length and gives a smoother finish. Be careful about the right sides of the fabric in this step.
3. To the centre front pin the facing and sew down in a v, stitching across one stitch at the bottom of the v. To reinforce, shorten the stitch length.
4. Sew shoulder seams through one layer only. The remain-



ing one can be hand sewn or, with a certain amount of juggling, machine sewn.

5. Gather the sleevehead mainly on the top — gathers should not extend down the front and back — pin in place, easing it to fit as necessary.

6. Sew the sleeve in the armhole and trim.

7. Sew the collar together, apply to the neck, and finish.

8. Sew the side seams and underarm seams in one (figure 5).

9. You can do a proper shirt placket, you'll find several ways in most books. However, it is easier to make the arm seam your placket and reinforce it with a bar tack.

10. Gather the sleeve end to fit the cuff.

11. Sew and apply the cuffs.

12. Work the buttonholes and sew on the buttons.

13. Hem the shirt bottom.

14. Sew a button and loop for the front if desired.

There is no end to the possibilities for individualising and decorating this shirt. From lace and brocade, embroidery, top stitching, or quilting, or even the use of several fabrics or colours. Let the shirt be a creation. If you are going to the time and trouble to create it, make it special . . . you'll be seeing it for a long time. Happy sewing.

Frost-free gardens

by Jackie French

Braidwood, New South Wales.

FROST damage isn't inevitable. If you don't get frost in your house there's no reason why you need have it in your garden either, but in most cases it's simply not worthwhile managing your garden to that extent.

There are a number of things you can do however, to reduce your frost problems. Some are simple, some a lot of work, and the more complex ones can be expensive. It's up to you to decide how much trouble you're prepared to go to in minimising frost in your garden.

Choosing a frost free site

The best frost prevention is choosing the most frost free site. Even in a small garden susceptibility to frost can vary enormously. Imagine frost as a body of cold air flowing like water. It will settle in dips, flow down gullies and water-courses, and be easily blocked by fences and other plants. If frost can drain away it may leave high spots clear, especially if they are north facing and so, warmer.

My garden is on a slight slope with a ridge behind it. Even in this small area there are enough differences in microclimate for me to grow cherries at one end, where the frost stays till midday, and have avocados fruiting at the other.

Remember too that the worst frost damage occurs when plants thaw rapidly. I get nearly as much frost as a friend on the tableland above me — but he gets much more frost damage, because direct sunlight hits his crops at least

two hours before it reaches mine every morning. His plants thaw quickly and are damaged, whereas mine have a chance to thaw slowly before the first rays of the sun touch them.

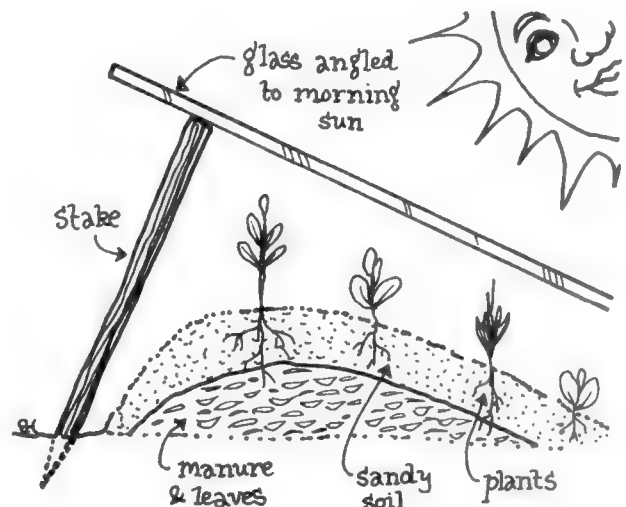
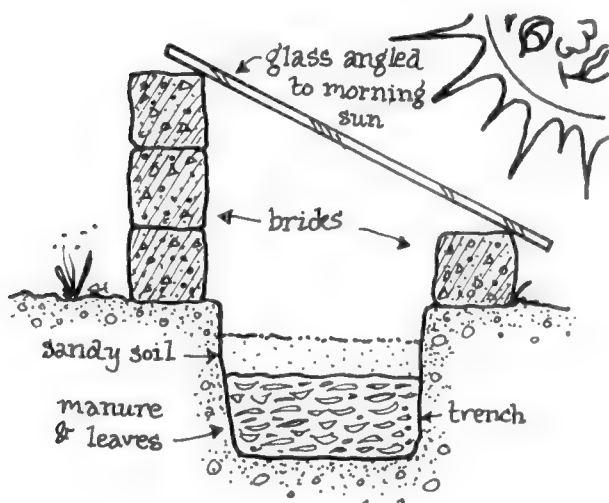
It's worthwhile sometimes covering frosted plants with newspapers or sacks in the early morning so they thaw more slowly (see repairing frost damage). A north west facing slope will warm up more gradually than one facing north east.

It's also a good idea to watch an area for a winter to see how frost patterns fall before you do major plantings. You need to work out if your intended garden design will change the frost pattern. For example a new fence might block the frost and burn off plants previously untouched, while clearing a hedge could let frost drain away. The slow growth of a large tree may gradually protect the plants beneath it.

Making a frost free site

If you are on a slope clear away any blockages if you can. Weed piles, fences or even long grass or bracken around the fences can prevent the frost draining away. If you have a hedge that you don't want to remove, try cutting low drainage holes in it.

Mulch can make a considerable difference to frost, by keeping the soil, and the air just above it, warmer. Dark mulches work best, as more heat is absorbed during the day. Mulches that trap most air, like hay, are also good: dark semi-rotted hay is excellent. Mulching your garden will of course mean that it takes longer to warm up as well as cool down, but it should be warmer when you need it, in the frosty hours of the early morning.



Cover your plants on nights when a frost is likely. Make a guard of old fencing wire or tomato stakes and cover with sacking, plastic or whatever is on hand.

Frosts can usually be predicted by gazing at the sky at night. If the stars are particularly bright and twinkling there will probably be a frost. Frosts are less likely on cloudy or windy nights unless the cloud clears in the early morning.

It's worth keeping frost records from year to year. In most areas the dates of the first and last frost each year are fairly consistent. It's helpful to know, for example, that last year your first frost came in early May and your last at the end of August.

An old orchardist's trick is to light fires between trees. The smoke from the fires is actually more useful than the heat from the flames. Orchardists used to use specially designed braziers that burnt all night with a lot of smoke. Try covering a good bed of coals with green wood instead.

In very cold areas snow can actually act as an insulator, and will do less harm than the frost. Don't clear it away from your garden, heap it up instead.

A weekly spray of seaweed or nettle tea is said to increase plants' resistance to frost. Either spray can be homemade: just cover with water and dilute to the colour of weak tea when needed.

Overhead irrigation helps protect frosts by releasing the latent heat of the water during spraying. For this to be effective in helping your crops you must start spraying when the temperature is still at least 2° C or more. You don't necessarily need large scale commercial equipment for this. A garden spray or even microjets can also work well.

Wind machines are used commercially to mix cold air with the warmer air above it. (Remember when dealing with frost: cold air sinks, warm air rises.) These are available commercially, or can be made at home. A ten horse power motor driving a propeller on a ten metre tower is claimed to raise the temperature over a hectare by 2° C in a few minutes.

Some frost prevention gardens

The covered garden

Circle, and then cover the garden with wire mesh so only the tops of the plants show through. The mesh should stop the leaves blowing away. Part the leaves to harvest crops through winter. Be warned, however, your plants can get very dry under this mulch, won't grow much and can eventually rot. This trick is best kept for about six weeks in late autumn or early spring for late harvesting or hardening off early plants.

The moated garden

Dig a moat around your garden, or a pond in the middle of it. Anyone who has watched steam rising from a lake or river in the early morning can imagine the heat sink effect of bodies of water.

The sheltered garden

Orange groves in England used to be planted in specially designed groves of other trees, tall and thick, that kept them sheltered, much like the walls of a house, and protected from cold winds. However, if this means planting it on the down-slope of your garden it's probably not worth it unless you can include frost drainage channels in your design.

The high garden

Gather up old tyres, and pile them high: as high as you need to get your plants out of the reach of frost. If this means a pile of more than three tyres drive a stake down the middle so they don't fall over. Now fill them with earth, compost, or old hay or manure. If the material is still decomposing this will give a bit of added warmth, although it isn't essential.

Plant your crops up top — even fruit trees work with this method, as long as the whole setup is well staked till the roots grow down below the level of the tyres. Water well because drainage is excellent in tyre gardens.

You can of course build up your aboveground frost free garden from materials other than old tyres, but these are easy to come by, and because they are thick and black they absorb and retain heat well.

The flooded garden

An emergency method of keeping frost from your crops is to flood them. This is easy in a garden with waterproof (concrete or mortared stone) permanent edges. Otherwise edge the garden with boards, making sure the ends butt firmly.

Now line the garden with newspaper, at least 6 pages thick, making sure that the pages overlap and rise up to the top of the boards. Just before you go to bed, on any clear starry night that seems to smell of frost, fill the bed with water, as deep as possible. Leave the hose just dripping.

Take the boards away in the morning to drain away the water. As long as you drain the water in the morning you can use this method even with plants that are susceptible to collar rot, especially if you give them their own collars of newspaper to stop soil-borne spores from infecting them.

The manure heated pit garden

Dig a hole about 60 cm deep, pile in leaves or still decomposing manure. Cover with sandy soil. Plant your vegetables. Now lay a few stakes over the pit and balance old windows or clear plastic on a few bricks so they are oriented to the morning sun.

These beds can also be used to help strike cuttings needing bottom heat or to get early seedlings for spring planting. The heat generated by the decomposing material should mean that this pit cold frame will remain relatively frost free.

Formal aboveground heated frost frame

Make a manure or compost pile about 60 cm high. Lightly cover it with soil. Carefully fit a cold frame over the top of it, so the top is level with the top of the pile and the main slope is oriented to the morning sun. A good mix for the compost pile is equal parts of coarse leaves (not gum leaves) and fresh cow or horse manure. This mixture produces a good, long lasting heat, but experiment with any compostable material on hand. Wait about a week before planting out the cold frame to give the bed a chance to warm up evenly (see the diagrams on page 21).

Repairing frost damage

Remember it isn't the freezing that injures the plants as much as the thawing, as the frozen cells expand and burst. There are two ways to limit this. Firstly cover your plants before the sun hits them, either early in the morning or any night you expect a frost. Try a hessian sack on stakes, or a loose sprinkling of hay all but covering the plant. Remove the cover once the plant has warmed up, say about midday. Or give your plants a thorough gentle watering before the sun hits them. This way the plant cells gradually relax instead of bursting.

Even totally frozen plants can be restored this way, but it does probably mean getting frozen yourself, leaping

out of bed in the still dim hours of the morning.

As a last resort, of course, rely on frost hardy plants and ones that have been hardened to your area, not forced in a greenhouse and smothered in a heated supermarket or garden centre. You can harden your plants gradually by leaving them outside for longer and longer periods each day until they're used to the local conditions.

Frost resistant vegetables include broccoli, cabbage, cauliflower, carrots, parsnips, brussel sprouts, onions, spring onions, silverbeet, spinach, Chinese cabbage, kohlrabi, chicory, leeks, celery, beetroot, winter radishes, turnips, foliage turnips, peas and broad beans (if not flowering), sorrel, winter lettuce, salsify, seakale, shallots, New Zealand spinach, and, to a limited extent, potatoes.

Especially frost resistant fruit includes rhubarb, currants, gooseberries, cold climate blueberries, medlars, cranberries, quinces, loganberries, mulberries, crab apples, damson plums especially, and other plums to a limited extent, hazelnuts, chestnuts, walnuts and apples. Many other sorts of fruit will take heavy winter frost, but late spring frosts can prevent fruit set. Try the overhead spraying or smoke techniques, seaweed, nettle sprays or high mulching.

With practice you can learn to literally 'smell' a frost: it's a sharp, clear, almost sweet smell. Once you've learnt to know the portents you can judge for yourself how much effort you're prepared to put into protecting your crop.

The Come-Along Winch

More powerful than a locomotive. Able to leap tall buildings in a single bound . . .

by Steve Fitzgerald

Mongogarie, New South Wales.

WELL, actually, not quite as powerful as a locomotive (though pretty strong) and not quite able to leap tall buildings in a single bound (but useful in construction) the winch really is a 'super' tool.

The winch comprises a handle, a couple of hooks, ratchet, a length of wire rope, a piece of metal and a few nuts and bolts to hold it together and is elegant in its simplicity. It's also quite compact and packs into 23 1/2 x 2 1/2 inches and weighing 2.7 kilograms. High praise I know, but it's a useful tool.

We bought our winch for about \$20 five or so years ago (the present cost is about \$24.95) to take

when we visited friends who live in a fairly remote place along a bad road. As there were sometimes trees fallen across the road we intended to use the winch to pull them out of the way. This fortunately hasn't happened, but I'm sure it would do the job as long as the tree wasn't too enormous.

We've used it for various jobs over the years: pulling large rocks out of the bottom of holes, winching unwilling donkeys onto floats, it can even be used as a fence strainer if you lack the proper tool.

Where it really came in handy though was over the

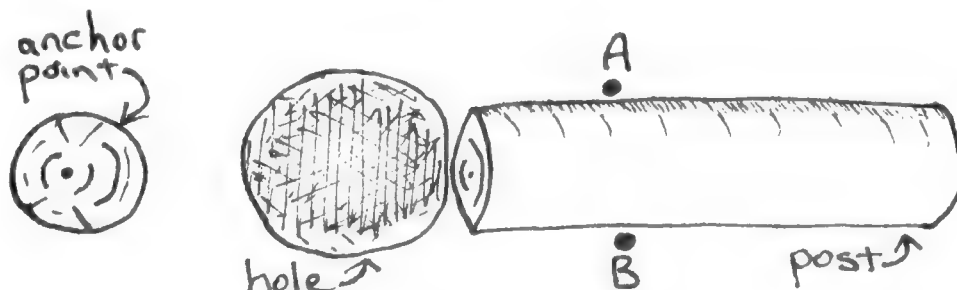


Figure 1a (a bird's eye view).

past six months or so when we got around to building a loading ramp for our cattle and a fairly large shed (Every Aussie Boy & Girl & Cow Needs . . .).

If you already have a reasonable size tractor with a jib on it you probably don't need to read the rest of this story, but if your place doesn't run to such exotica and you need to 'lift and shift' heavy poles or posts, read on.

A ramp and yards are mighty handy things when selling animals off the farm (or buying them for that matter) and although we were able to use neighbours' ramps, this entailed walking them down the road, making sure they weren't panicked by passing trucks, and then waiting, sometimes for hours, till the carrier arrived and picked them up. Thus, the ramp and yards.

You can look at yards and ramps in your area to get an idea of their dimensions and construction methods, and we may write about our way of doing it if people are interested. The concreting and carpentry presented no great problem, but the hard part was getting the two end poles, which were about ten feet long by ten inches in diameter (also green so they were heavier) upright in the three foot holes we dug for them. They were too heavy even to lift one end without using a seven foot metal bar as a lever and that would only raise it a few inches.

First of all you need an anchor point, a shorter (stout) post you've already put in as part of the ramp, or a nearby corner post, tree or even the bull bar of your car. The higher the attachment at the anchor point, the more efficient your leverage will be.

Dig your hole, giving yourself enough room in it to manoeuvre the pole to where you want it when it's been dropped in. Manoeuvre the butt of the pole to the edge of the hole using a lever or bar pulled behind a car, or whatever, and probably a few curses.

Place the pole so its length is in the direction you'll be pulling and its top furthest away from your anchor point (see figure 1a). Now drive in two star posts about a third of the way up the length of the post (points A and B in figure 1a on previous page).

These act as guides to

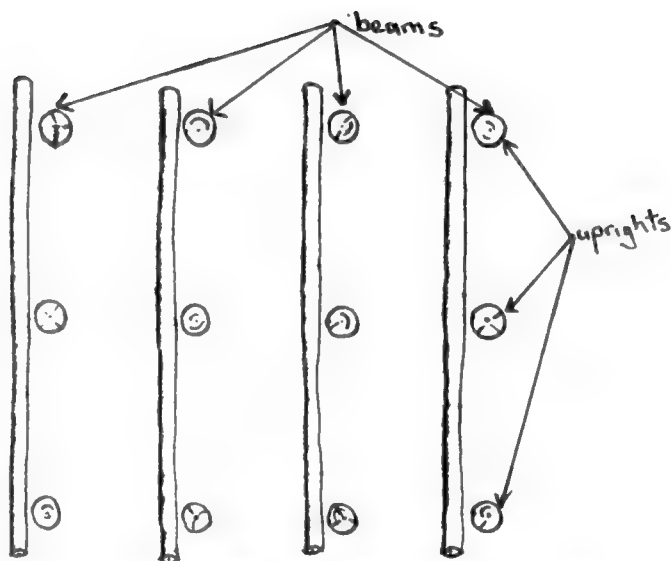


Figure 2a, from above.

keep the pole in line as it rises. They needn't be as deep as you'd normally put them in, as long as they're solid—you'll be wanting to pull them out and re-use them when you finish for work on the next post.

Next put your bar, or even a solid tomato stake, in the hole, hard up against the side nearest the anchor point. This is to stop the side of the hole collapsing as the butt of your pole slides down that side to rest upright in the hole.

The next step is to put a piece of strong chain, or heavy rope around the anchor post as high as you can, to which the 'body' of the winch can hook on; the same for the end of the pole to be lifted, at the furthest point from the anchor. You'll need enough left over to tie, or hook, onto the hook of the winch at the end of its wire rope (see figure 1b).

Put a couple of nails into both these points to make sure your rope, or chain, won't slip as pressure is applied. Go for it—as you start winching, the pole will slide along the ground till it hits the bar poking out of the hole and will then slowly start coming upright. The winch may run out of wire rope before the post is high enough to drop in the hole by its own weight. If so simply tie it in position with another length of rope or chain, rewind the winch cable and continue.

Ram in as you would to finish any post. There, wasn't that easy. As it happened Marja and I both worked on these posts, but there is no reason why one person couldn't do this job unaided.

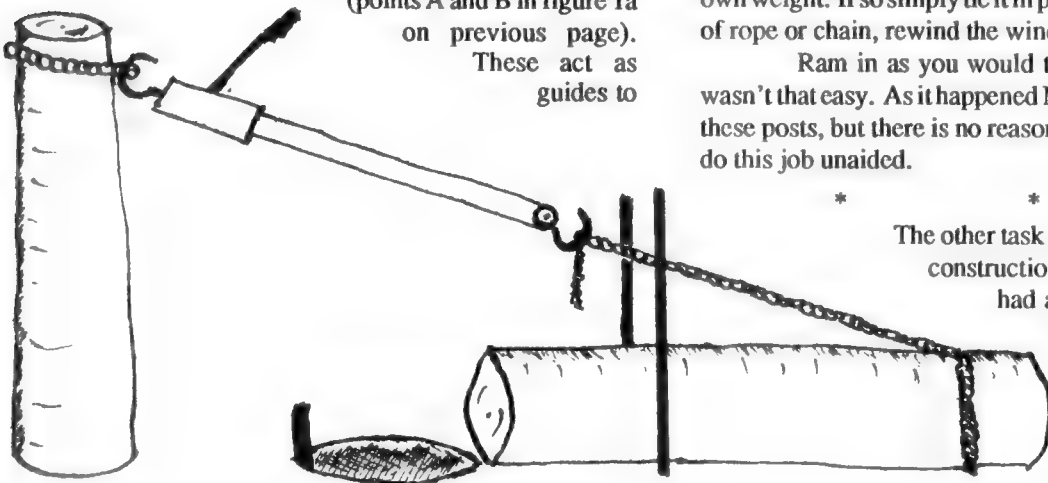


Figure 1b.

The other task I want to write about is the construction of our shed. We already had a dozen large poles in the ground which could be put up the way already described, but I must admit, we had the assistance of a mate and a tractor and jib to get these upright. Our

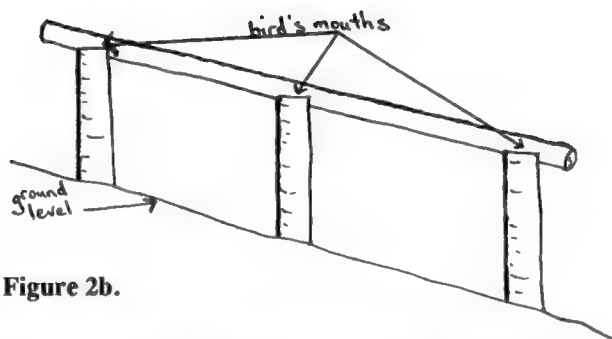


Figure 2b.

problem was how to get poles twenty two feet long, with a diameter between six and eight inches, up the eight feet or so necessary to sit them on top of the poles already in the ground. Each horizontal pole (beam) had to sit on three vertical poles.

Step one was to get the poles to be raised, in position next to the uprights which would support them. We had ordered these poles from a nearby bush mill, so when they were delivered we unloaded each of them in their places (see figure 2a). Slightly off the subject of winching, but the next thing to do before lifting the beams was to 'birds mouth' them. 'Birds Mouthing' entails cutting mitres into the beams so they will sit securely on their supports (see figure 2b).

These are best done with a saw and chisel on the ground before the beam is raised — much easier to do this on a solid surface than on top of a ladder. Please note — this method of 'birds mouthing' does not necessarily include the odd bit of 'fowl mouthing' when the hammer connects with your knuckles rather than the chisel.

A safety precaution now: at the top of the poles in the ground and on the *opposite* side to where the roof beams are lying, nail a couple of three feet tomato stakes to your uprights at both ends; two thirds of their lengths against the

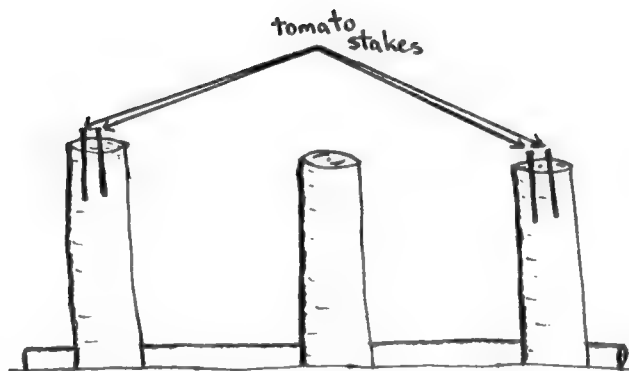


Figure 2c.

poles, one third extending above. These will also act as guides for your rope (see figure 2c). This is to prevent the beams falling down onto the side you're working on. The advantage of this step is that it not only avoids (serious) injury to heads and other extremities, it also saves hauling the beam all the way up again if it slips over the top.

Now comes the choice of rope or chains for the winching. The winching busted all the suitable chains we had (weak links, all that stuff) and a good chuck rope did the job perfectly well. It didn't cause tension on the links as they slid 'up and over' the vertical post (see figure 2d). Around the base of the uprights attach a strong chain or rope, leaving enough slack to put the hook of the winch through. Drive a couple of nails in so they will prevent the rope or chain slipping up when pressure is applied.

Now fling your rope over the top of one of the end uprights — we used it doubled — attach it to the beam. A suitably heavy duty 'D' link is useful, attached to the end of the rope because it tightens around the beam when under pressure. It also saves untying tightened knots when you come to undoing them.

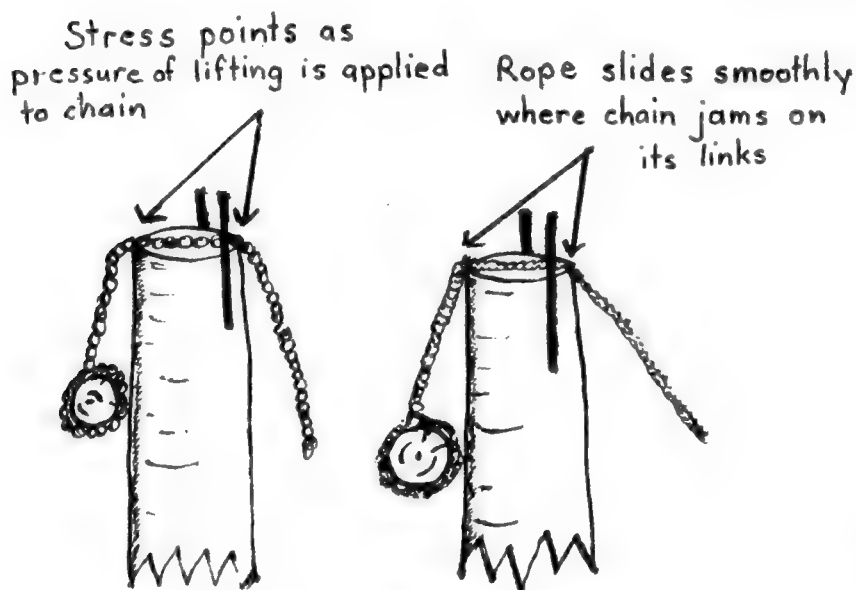


Figure 2d.

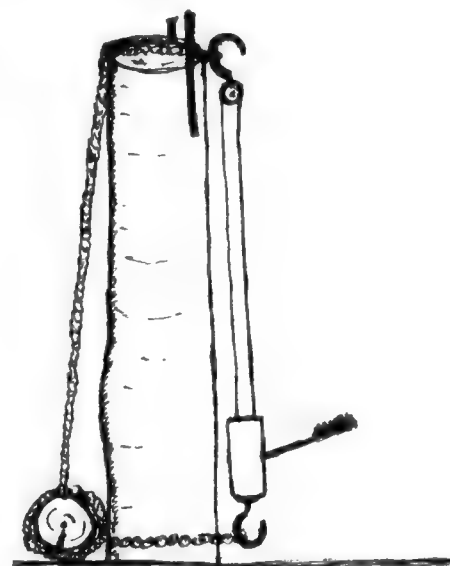


Figure 2e.

Extend the wire rope fully on your winch, connect the hook on the body of the machine to your 'anchor chain' and tie the rope (connected to the beam and passed over the top of your upright) to the hook on the winch at the end of the wire rope (see figure 2e).

Start winching. When you run out of wire rope, tie that end of the beam onto the post, take the winch to the pole at the other end of the beam and repeat the procedure, 'walking' the beam up the uprights in this manner. When the beam is beside the top of the uprights it can be very difficult to get it over the corner at the top. I found the easiest way to overcome this was to apply a lever (good old long metal bar) to the middle of the beam and using the top of the middle post as a fulcrum, ease the beam into place.

It also helps if you tie both ends of the beam at the top of the uprights, attach the winch to the middle post and apply pressure. This way you can use the lever to guide the beam gently into place, rather than using brute force, while balancing on a ladder and wielding a seven foot metal bar.

Again, there is no reason why one person can't do this job. A couple of handy hints: to help guide the rope over the top of the uprights I made a shallow groove, with a hoof rasp, to ensure the rope stayed on course as it was hauled. Don't bang in the nails holding the tomato stakes all the way. If the nails are driven in securely and their heads bent over they will be much easier to remove. Before starting to winch, make sure ropes and chains are taut, so you won't just be winching slack. Take care and happy hauling.

A soiled reputation

AUSTRALIA'S reputation as a farming nation is being soiled, according to Dr Brian Roberts from the Darling Downs Institute of Advanced Education. Dr Roberts says lack of interest in conservating our farming land is causing irreparable damage to the nation. Australia loses 400 hectares of good farming land a day — the equivalent of 10 tonnes of soil for every tonne of wheat we produce.

Dr Roberts, Dean of the School of Applied Science at the Darling Downs Institute of Advanced Education, has received a grant from the National Soil Conservation programme to promote a study course he has developed on soil conservation. The course was originally directed to farming and conservation groups but Dr Roberts is now directing it to the general community also. He argues that soil conservation is not only the responsibility of farmers or conservation groups but of the whole community because our future and livelihood depends on its preservation.

"In the late 1970s a national survey of land erosion showed that 51 percent of Australia's rural land had degradation problems. We produced a course on soil conservation by external study and the result was Australia's first comprehensive text on technical, financial and political aspects of land degradation. Topics covered include the historical perspective of erosion, erosion processes and practical control problems plus chapters on land use and catchment co-ordination. There are also chapters on the economics and politics of soil conservation with a special section on land ethics and educating future generations in land care," said Dr Roberts.

"Fifty-one per cent of land used for grazing and cropping in Australia is affected by erosion, 22 per cent needs management and 29 per cent needs more work."

"Soil is virtually a non-renewable resource. It forms too slowly under Australian conditions for its renewal to rate as a consideration. Hundreds of thousands of hectares of land have already been abandoned around Australia and more is being cleared daily."

"New South Wales loses 50 tonnes of soil annually per hectare. Victoria loses 40 and Western Australia 30. Queensland unfortunately heads the list with losses of up to 350 tonnes per hectare. Recently 70 families in the Childers area of Queensland were forced to abandon eroded land after less than a century of cane farming."

Dr Roberts feels that the Bicentennial year is a time to remind land owners that over the past 200 years the soil has been worked with little thought to the future and that, if the country is to maintain its wealth for the next 200 years, better land management must be initiated: "Australians," he says "must be caretakers of the land, not just users." Dr Roberts does not propose more research into why soil conservation is needed. He says he would cut research and expand advisory services because we know what the problem is and we know what the solution is. Now we need to offer financial incentives to help farmers conserve their land. He agrees that we don't have all the answers but says that we do have enough to begin immediate action.

"Too many people," he says, "regard soil conservation as a non-event because it is a natural process. Soil conservation doesn't have the same appeal as, for example, the Crown of Thorns starfish in the Barrier Reef or sand mining on offshore islands."

Dr Roberts sees his external study course (see the advertisement elsewhere in this issue of Earth Garden for enrolment details) as another weapon against the apathy and ignorance destroying our most valuable asset: soil.

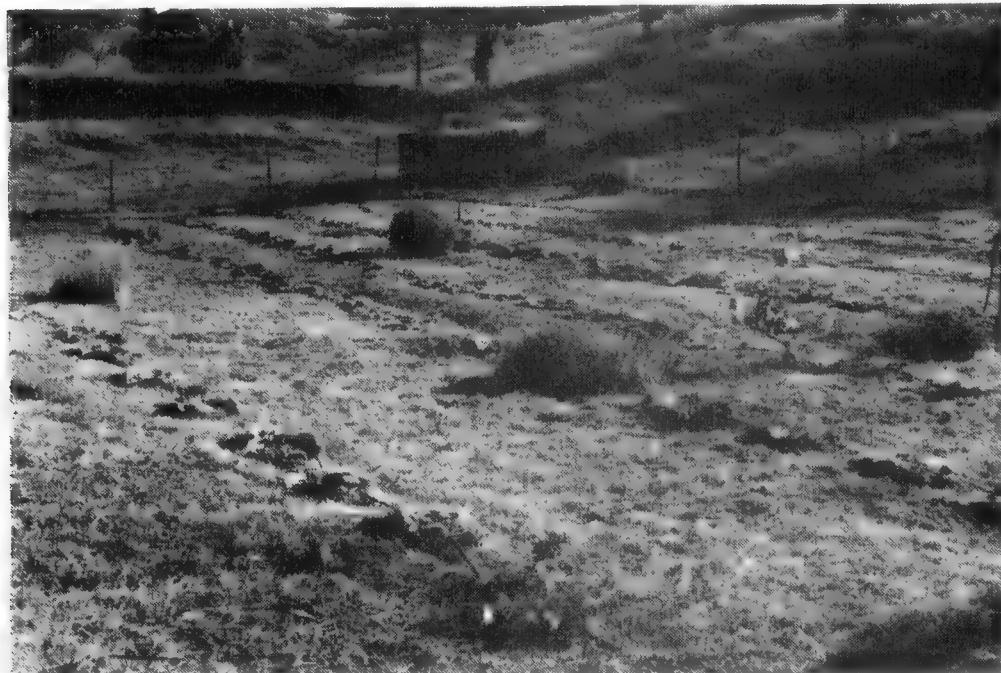
Tree regeneration for shelter and woodlotting

Chris and Rhonda Martin
Coonabarabran, New South Wales.

EVER since we bought our property, 'Mullionkale', we have been planting trees. It is easy to destroy the Australian bush but very difficult to get it to grow again. The bush in its natural condition provides a micro-climate that nurtures native seedlings using Mother Earth's methods and has done so since time began — it is almost impossible to duplicate.

We decided to revegetate some of our land because less than 10 percent of the area carried natural bush. We also wanted a permanent wood supply from a woodlot because much of our dead standing timber contained nesting holes for birds and homes for other small mammals. Our first 200 trees were free and were supplied by the Soil Conservation Service as a soil stabilisation technique in the local catchment area.

Regrettably only about 15 percent of these have survived. The main problem seems to be our stock who, even if they only use the tree guards as a rubbing post, still hitch up the wire. This allows smaller beasties such as rabbits to munch on the plants.



An old vegie garden converted to a fodder tree plot with a drip irrigation system.

Individual tree guards versus lots

We have used a number of individual tree guard designs but now feel, for the time and effort incurred, that tree lots with efficient fencing are cheaper and produce better results. For example, the most stock-proof single unit design we use takes three posts, and an avenue of nine trees uses 27 posts. The same number of posts and netting used against an existing fence in a triangular configuration plus plain wire allowed the planting of more than fifty trees, takes about the same time to erect and is much easier to water, especially if trickle irrigation is used. The only disadvantages we found are the loss of grazing area and the need for slashing grass. Against these is the ability to recycle the materials for another fence.

Ground preparation

This is not a very natural consideration but nor is the area being unable to naturally regenerate in the first place! Deep ripping the area the autumn prior to planting increases aeration and water penetration. Disadvantages can be the risk of increase in noxious weeds and alteration of water flow patterns as the soil disturbance tends to cause ridging with the water running down the sides of the ripped

line. Always rip across a hillside, never down the slope. Contour ripping will hold water more efficiently whereas downhill work will cause erosion. Even manual loosening of the soil around the chosen site will increase the chance of the plants' survival.

Grow your own

Acacias and many eucalypts can easily be grown from seed. The water bath method works well for eucalypts:

1. Fill an innerpot with seed mix.
2. Tamp down lightly.
3. Sprinkle seed thinly on top and just cover with seed mix.



Eucalypts grown using the water bath method.

4. Place this pot on a larger container such as an ice cream bucket and fill the outer container 2/3 to 3/4 the height of the inner container with water. Keep to this level. You may have to hold the seed pot down until it has absorbed the water.

This method keeps the seeds moist but not soaked. Germination is faster and when the seedlings are pricked out at the 2-leaf stage the survival rate seems to be higher. Acacias and legumes such as lucerne tree prefer individual pots and do not respond very well to being pricked out. Our experiments with tins versus long wedge-shaped pots, and seedling trays versus tin cans or ordinary plastic pots, indicate a better survival rate and greater growth using the long narrow pots.

Planting out

Small trees, up to 25 cm high, seem to develop faster than those grown in large pots or plastic bags. A crucial factor is the elimination of competition from weeds and grasses. Trees grown using some form of control such as weed matting, produce up to five times the growth of those where competition is permitted to grow right around the tree. There is some benefit from using grass as a shelter but this should not be allowed closer than 0.3 m around the tree. A recently released material called Hortomulch is available in rolls and consists of peat and tree refuse fibre. It is biodegradable, is said to increase the micro-organism level in the soil and assists in keeping soil moisture to ideal levels. We are experimenting with several layers of newspaper, with a 50 cm hole in the middle, as a mulch for young lucerne trees. This seems to work for light to moderate grass control but is not heavy enough for vigorous grasses such as paspalum.

Commercial tree guards

Effective permanent guards are the only way to keep stock at bay as shown when we finally removed some 200 cm steel posts from around a mulberry tree. "Surely the little darlings won't be able to reach it now," we said. Wrong! One donkey on hind legs demolished five years of loving care in two minutes. Many of the tree guards available on the market provide a good micro-climate for the first few years of a tree's growth. However, they are not

stockproof and most are not recyclable to any great degree. With woodlotting it seems to be desirable to intermingle fast growing species with those that develop slowly. A possible method would be to plant fast growing wattles such as black (*Acacia decurrens*), Cootamundra (*A. bailyana*) and Green Wattles (*A. mearnsii*) at one metre intervals between the slower growing eucalypts. These three wattles respond reasonably well to heavier soils but can have poor spindly growth in light sandy country.

Efficient watering will increase growth rates of both species, to levels where the acacias could be cut for firewood after five years and the eucalypts after ten. They also provide shelter for the slower growing trees. One experiment at Alice Springs, using the nutrient-rich waste from the sewerage treatment works, has produced phenomenal results with trees being cut for firewood after three years. Usable firewood is becoming a scarce energy resource with only large trees, many with nest holes, being left in some areas. Locally, firewood has increased in price over the past five years from \$15 to \$38 per tonne.

Trees are a renewable and sustainable energy resource but must be planted and cared for — it should not just be left up to Nature. Of course, there are many other benefits from tree planting, from a better living climate to providing a refuge and food source for domestic and native animals.

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Growing farm fodder trees

by **Brendan Lay**

Senior Soils Officer, South Australian Agriculture Department.

A FODDER tree is any tree or large shrub that has edible leaves, pods or seeds, and which may require pruning or cutting to make them accessible to grazing stock. There are trees with at least some potential fodder value that can be used for most other purposes, for example shade and shelter, soil conservation, fuelwood or timber.

Like any other tree-planting project, careful planning and species selection to match soil and climatic conditions will pay the highest dividends.

Using fodder trees

There are three ways a plantation of fodder trees can be used to provide food for grazing stock:

- by periodically allowing direct access to young trees or the lower growth of older trees at a time when other fodder supplies, especially green forage, are scarce.
- by allowing stock continuous or intermittent access to grazing of leaf and pod fall under fodder trees. This approach, often used in arid areas overseas, has the advantage that many trees drop their pods or leaves during dry periods when other forage is in short supply.
- by cutting foliage that is otherwise out of reach of stock as a regular part of farm grazing management or to provide survival forage to maintain stock in an extended drought.

access

Tree seedling protector

INTERNATIONAL Reforestation Suppliers of Bruthen, Victoria, have recently begun selling a new biodegradable, non-maintenance seedling protector. The protector is currently being trialled in western States for its effectiveness to deter rabbits and hares, native and domestic livestock. In Yarram, Victoria, the seedling protector is being tested to see if it may be suitable as an alternative using 1080 poisoning of native animals in commercial tree growing areas.

Protective barrier devices have been used successfully in North America for several years where tens of millions have been applied. Because of its low costs (10 cents retail), fast application (1000 to 3000 per day per person depending on species, seedling size and browsing activity) and non-maintenance, we believe it will be one of the country's biggest sellers next tree planting season (commercial tree growers enjoy a 35 percent discount).

The developer of the guard, Mark McCord, is an ex-reforestation contractor from the USA. His experience in tree protection has involved various methods of applications of the protective barrier devices (over half a million). The seedling protector is a valuable device for large and small scale tree plantation growing and can be up to 50 percent cheaper than other methods of seedling protection.

Enquiries about the seedling protector can be directed to Mark McCord, Director, International Reforestation Supplies, Bruthen, Victoria, 3885.



Mark McCord inspects trials near Sale, Victoria with his seedling protector in use.

tained high yields or high-protein fodder in dry areas than the long-lived carob (*Ceratonia siliqua* — see also the article on carob trees in EG 59). Carob originates from dry Mediterranean districts and its fodder value is in the large crops of pods that can be produced by selected trees. These pods are relished by all stock and most readers also know of it as a chocolate substitute.

Carob is extremely adaptable to a range of rainfall zones and soil types, and will survive in districts receiving from 250 to 1000 mm a year. However, it is frost sensitive for many years after planting, and will not grow well in wet or saline soils. A problem with this species is that it is very slow growing, even on good sites. As pods are carried only on female trees, it is advisable to bud-graft seedlings to selected heavy-cropping female varieties. All plantings of carob need to be fenced off from stock for at least 10 years. Mature trees are a permanent asset to a property, and provide good shade and shelter. They will tolerate dry rocky soils and coastal sites that are exposed to strong winds.

Wattles

These small trees and shrubs are the world's most important fodder trees. In our arid areas, species such as mulga and ironwood provide fodder under extreme drought conditions, even though they are very slow growing. In the agricultural districts, some wattle species will grow quickly and provide good yields of nutritious forage. They have two disadvantages: they generally do not respond well to lopping when mature, and they are fairly shortlived. Of the many native species of acacia, two in particular are worth considering as fast-growing fodder trees or shrubs.

Silver mulga — *Acacia argyrophylla*

This wattle is an attractive shrub and is of value because it produces well in dry districts with rocky or light-textured soils. It is easily direct-seeded and should be planted in a block, with stock given access in late summer or early autumn once the block is established. It will not tolerate wet sites or high rainfall. The preferred rainfall range is from 300 to 500 mm.

Early black wattle — *Acacia decurrens*

This is a very fast-growing tree and is a good species for planting in high-rainfall districts with lighter soils. The foliage is nutritious, trees can be cut when needed and the timber used for firewood. It is of ornamental appearance, will regenerate readily from seed but needs at least 650 mm of average annual rainfall for good growth.

She-oaks

This group of fast-growing native trees (*Casuarina* and *Allocasuarina* spp) should not be overlooked for use as fodder on the farm. Like legumes, they fix nitrogen in the soil, and there are species that grow in almost all soil types

and rainfall zones. A possible disadvantage is that the foliage is very fibrous and may cause impaction problems if stock have no access to softer feeds. The two species worth considering are as follows.

Drooping she-oak — *Allocasuarina verticillata* (syn. *Casuarina stricta*) This is a hardy tree native to most agricultural districts, and can be direct-seeded or allowed to regenerate by fencing relict (surviving) stands against stock. It prefers rocky dry sites of limited agricultural use, and can be lopped during dry times. Trees last 40 to 80 years.

Swamp oak — *Casuarina glauca* One of the few fodder trees that will grow well on saline wet sites, swamp oak also suckers profusely once established, helping in soil stabilisation. The species is readily grazed by stock, and provides an excellent windbreak or shelterbelt. Swamp oak can eventually grow into a large tree on deeper soils. Non-suckering forms are available. All she-oaks provide excellent firewood, but the trees themselves are susceptible to bushfire damage.

Honey locust

Like the carob, honey locust (*Gleditsia triacanthos*) can produce large crops of nutritious pods, but it is recommended only for rural plantings in warm, frost-free districts under irrigation. Its performance in dryland plantings or in cold high-rainfall districts has been disappointing. It does, however, make an exceptional ornamental tree. Avoid seedlings grown from thorny parent trees — these thorns grow from the trunk at about head height and can be quite dangerous.

Willows

Cold, high-rainfall districts, have the right conditions for willows such as the Matsudana (*Salix matsudana*) to produce high yields under conditions limiting to many other species. All willows require continuous high soil moisture levels and should not be planted in drier areas. They should be restricted to districts with more than 800 mm of annual rainfall, or where permanent fresh water is close to the soil surface.

Kurrajong

The kurrajong is a very useful fodder tree in areas where it occurs naturally (central-west New South Wales). Kurrajong (*Brachychiton populneum*) has an advantage in that it can be transplanted when above sheep-grazing height. However, it is very slow growing under non-irrigated conditions in drier areas and is not recommended unless as part of a general windbreak or shelterbelt design.

This article is based on material first published by the South Australian Department of Agriculture. Further information is available by contacting any office of the Department.

Beat the tree munchers

One of the first things we do after settling on a country block is plant trees. Often the land has been cleared by generations of farmers and New Settlers faces problems like lack of shelter for stock and pastures, no habitat for native animals and birds, and soil erosion.

Having selected the best sites, we plant our trees, give them a drink and retire to the verandah to watch the miracle. Oh, the horror and frustration when you find that your new plants have succumbed to your new pets. Maybe you had constructed some ingenious guards from old wire, lumps of iron and stakes or put up a fence. It's marvellous how a bit of patient digging, an itchy backside, can thwart such protective efforts.

Smallholders, Don and Fay Hall, from Victoria's north-east were coping with the same problems and have come up with an electrified tree guard they call the 'Electree'. Electree is an individual guard, and overcomes the problems of fencing-in trees. With fencing, apart from the cost, labour and lost production, access is difficult for watering, cultivating, weeding and trimming. Electree guards (when turned off) allow access to the tree, with no weed problem because animals graze all around. From a distance, all that's visible is a tree and an old car tyre (if used).

Electree is usually used where trees are planted along electrified fences. Trees can be planted up to two metres away, and on either side, of the fence. Each guard is linked to the fence power by ht fence wire, arched so animals can graze underneath.

An overhead line of fencing wire carried on widely spaced pine poles could also power the units. Such a line can power two rows of trees and costs around \$20 per 100 metres to construct. This is ideal for nut groves and orchards. Another method is to run insulated wires on or under the ground to link the guards.

Guards come in two sizes: one (up to about 1.2 metres high) suits cattle and sheep-sized animals. The other is to about 0.8 metres high and is for sheep and goats. Both can be fitted with an optional rabbit and hare control ring.

Each guard consists of one, two or three rings of ht fence wire connected by special sliding poly insulators to three spring steel uprights. In turn, the uprights are mounted on an old car tyre or three wooden pegs.

One of the Hall's friends, their charming goat Yvette, used to enjoy climbing all over massive mesh guards to get at her favourite trees. Now those same trees grow out through electrified guards and she walks by as though nothing was further from her mind. Other farmers in many districts are also reporting complete success.

Electree guards are sold direct by the Halls in kit form. Kits comprise uprights and insulators and range in price from \$1.59 to \$3. The user supplies the ht fence wire for the rings and fence connection plus the old car tyre or wooden pegs. The all-up cost varies from about \$2.15 to \$5 per guard. A generous range of discounts applies to large orders, starting at \$100. Energisers can be powered by mains, batteries or solar power so can be used in most situations. For further information contact Fay and Don Hall at the address shown on the ad on page 16.

Cost of home heating with different energy forms

The table of fuel costs below for domestic heating in southern Australia is based on current prices in major centres. Prices outside cities will be different for some fuels, particularly firewood.

FUEL TYPE	FUEL PRICE (12)	FUEL ENERGY CONTENT	EFFICIENCY (13)	COST OF USEFUL HEAT €/MJ
High Firewood	35-75 \$/tonne (1)	16MJ/kg (2)	65%	0.34-0.72
Efficiency Heater	35-75 \$/tonne	16MJ/kg	40%	0.55-1.17
Air Tight Heater	35-75 \$/tonne	16MJ/kg	15%	1.46-3.13
Open Fireplace				
Briquettes	147 \$/tonne (3)	22.4MJ/kg	65%	1.01
Coal	220 \$/tonne (4)	28MJ/kg	65%	1.20
Natural Gas	0.5717€/MJ (5)	1MJ/MJ	75%	0.76
Heating Oil	56€/L (6)	37MJ/L	70%	2.16
L.P.G. (7)	26€/L (8)	27MJ/L	75%	1.28
Electricity				
Day Rate	9.97€/kWh (9)	3.6MJ/kWh	100%	2.77
Night Rate	3.26 €/kWh (10)	3.6MJ/kWh	80%	1.13
Heat Pump	9.97 €/kWh (9)	3.6MJ/kWh	280% (11)	0.99
Kerosene	58 €/l (14)	36MJ/l	75%	2.15

Dribond: better than a Remington

by David McMunn

Uki, New South Wales.

SOME time ago I was faced with the problem of trying to seal cracking in a large concrete tank. The tank had stood, unable to fill up and almost sneering at me, for some time. I came across a product which I think is publicising. It is called DRIBOND, and is manufactured by Construction Chemicals Pty Ltd.

The pamphlet I received said:

"Dribond is cement, reinforced with alkali-resistant glass fibres and special bonding and waterproofing chemicals. When applied, Dribond is waterproof, extremely strong and provides a reinforced surface over a variety of surfaces. Dribond is also decorative, impact resistant and has high flexural strength."

After helping a friend repair cracking in her tank I decided it was time for me to tackle the big tank (it was now empty). Most of the cracks were easy to locate inside the tank (they'd been simple to see on the outside — I just had to watch the water flowing out!). First I scrubbed off the assorted build-up on the inside wall around each crack and then prepared the Dribond. I had to use Kemcrete, which is an associated liquid-bonding additive, to mix the Dribond to proper consistency. I found a spraypainter's mask useful to mix it because when the powder is dry it tends to blow into the surrounding air.

You apply the mixture with an ordinary trowel or, for galvanized iron tanks, a special corrugated trowel. I improvised with a rubber gloved hand. If you use your gloved hand don't expect to keep the glove in mint condition and I wouldn't recommend it for large jobs. The application stage worked well even though I found it quite easy to apply more than the recommended three to five mm thickness. It is also easy to leave the applied surface with glass fibres raised up which, without reworking, would mean jagged little barbs on the tank surface.

I did not have to worry about curing time because I had used the Kemcrete additive so the job was complete except for cleanup. I'm yet to assess the results of the repair fully but the tank is partly filled and there is already a marked improvement in its holding ability.

Composting toilet liner

Another application I intend to try with Dribond when time and money allow is to build the double chamber section of a composting toilet with cement blocks. It should give both a strong structure and water-proofed walls for the composting chambers.

The first course of the structure is laid on a footing

without any mortar between the blocks. After four hours curing time the remaining courses are stacked in 'running bond' tightly butted together. Next the Dribond mix is applied in a three to five mm coat to both sides of the wall. To allow for curing the wall should be mist-sprayed two or three times daily for two or three days after application.

The Dribond wall is "five times stronger than conventionally mortared walls using unskilled labour with 50 percent time saving".

The product comes in different colours for slightly different applications and in two grades, Dribond and Dribond plus, the latter for use in hot dry conditions as opposed to humid, damp or cold conditions.

An estimation chart for use in repairing tanks is as follows.

Tank capacity gallons (litres)	Floor sqm bags	Wall sqm bags	Total sqm bags
1000 (4,540)	2.43 (0.5)	9.7(2.5)	12.15 (3)
2000 (9,080)	4.32 (1.25)	12.96 (3.25)	17.28 (5)
3000 (13,620)	6.75 (1.75)	16.2 (4)	22.95 (6)
5000 (22,700)	11.01 (2.75)	21.06(5.25)	32.07(8)
10,000(45,400)	21.87(5.25)	29.16(7.25)	51.03(13)
15,000(68,100)	32.67(8.25)	35.64 (9)	68.31(18)
20,000(90,800)	45.63(11.25)	42.12 (10.5)	87.75 (22)
30,000(136,200)	78.03 (19.5)	55.08(14)	133.11 (34)

I was so impressed with the product I bought the company (only joking) and look forward to using it on the composting toilet. Dribond is not cheap, at about \$27 a bag, and Kemcrete \$8 per one litre tin, but it still seems to be a useful product. I found it in the local building supplies shop so it shouldn't be difficult to track down.

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... ENERGY PULSE ... ENERGY PULSE ...

New high power solar panels released

BP Solar Australia has recently released a new range of solar modules designed to decrease the overall cost of solar installations significantly (pictured below).

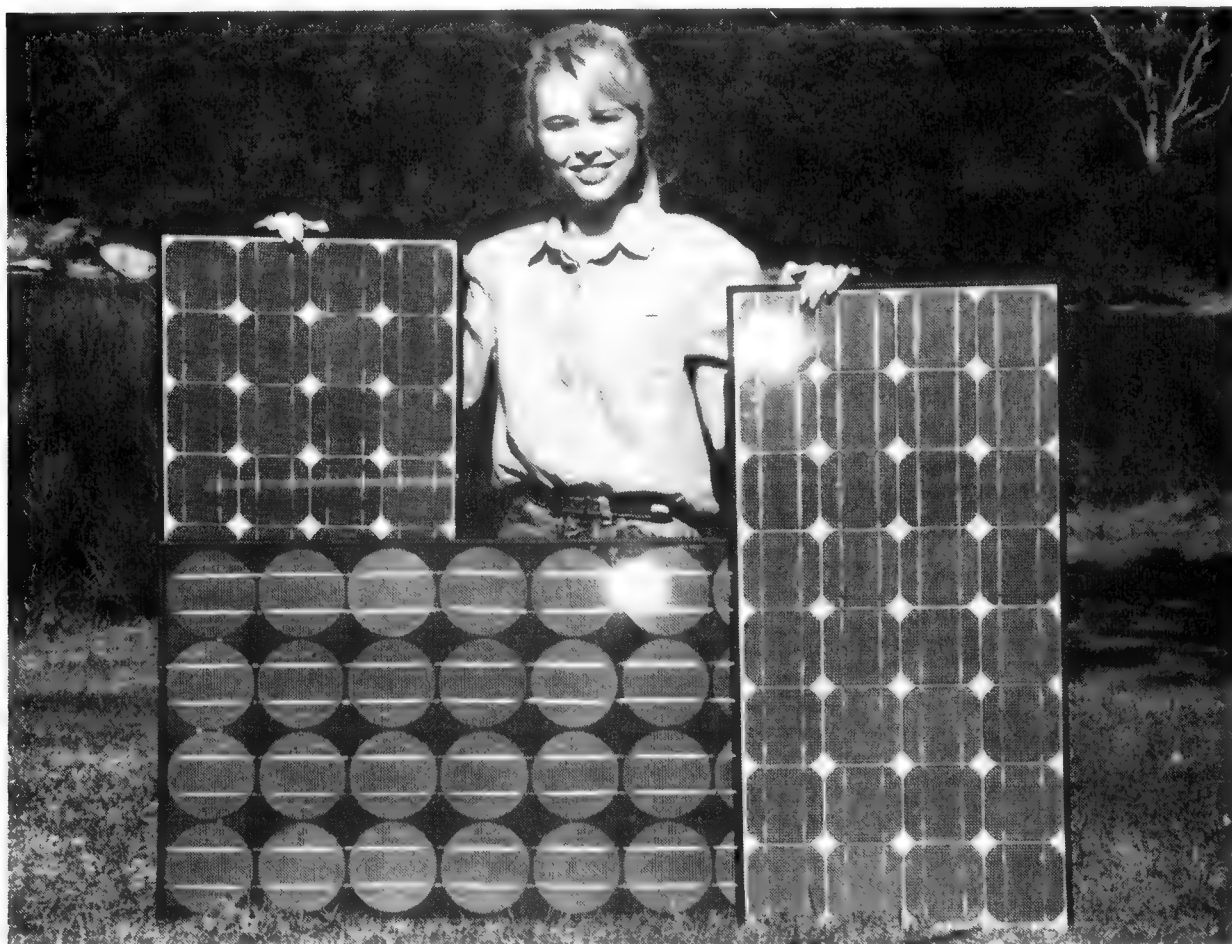
The new panels provide power outputs up to 30 percent higher than those previously available. The Suntamer range, designed and manufactured in Australia, has modules of 44, 52 and 58 watts, with the 58 watt model being the highest output panel available in Australia.

Solar power users can now specify fewer units to meet their power requirements, according to a BP Solar Director, Mr Tim Ind.

"Fewer modules will be required and there will also be savings on cable interconnects and support structures," he said.

"For example, eight modules will provide the same power output produced by ten of the previous type module."

The Suntamer range comes with a ten year guarantee and will be available through BP Solar's 105 distributors around Australia. The range has been designed to meet all major international standards, including Australia's AS 2915, Europe's ISPR 501 and the USA's JLP block V for solar modules.



Yes, we know: "What's a pretty girl got to do with solar panels?", but we don't get many good publicity photos at Earth Garden!

Pickles and chutneys to eat and sell

by Pamela Odijk

Wauchope, New South Wales.

PICKLES, chutneys and sauces make the most ordinary food interesting. They are not difficult to make. Here are recipes for some of the most popular ones with which I have won prizes (including firsts) at country shows and which have also been popular sellers at community market stalls. They make ideal gifts for city friends who may pay a small fortune for an imitation high-priced 'deli line'.

If you are making these for a market stall, make sure you label each product neatly — typed labels are best. Indicate the ingredients and how the product can be used. Have samples for tasting on small squares of bread or plain biscuits. Have two sizes — small jars for people who wish to use the chutney for crock pot casserole cooking and larger (not too large) for others.

Pickled onions

Quantity of pickled onions

salt

spiced vinegar (recipe given)

Peel the onions and place in layers on a container. Cover each layer with a teaspoon of salt. Allow to stand overnight. Pour off any liquid and wash the onions in a colander. Pack into jars and pour the cold spiced vinegar over. Add two or three cloves and peppercorns to each jar. Allow to stand for three weeks at least before use.

Spiced vinegar

Place all the following into a saucepan, cover and bring to the boil but do not allow to bubble. Remove from heat and set aside to cool and stand overnight. Strain the vinegar and pour over the onions in their jars. Seal and label.

5 cm cinnamon stick

1 teasp cloves

2 teasp allspice

1 teasp black peppercorns

1 teasp mustard seed

2-3 bay leaves

1 litre brown vinegar



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Pickled red cabbage (Use with salads, cold meats, vegetarian dishes)

1 red cabbage

3 teasp salt for each 500 g cabbage

Shred cabbage finely. Place in a large bowl and sprinkle each layer with salt. Allow to stand 24 hours. Drain off any liquid and rinse cabbage well in a colander. Pack into jars and pour cold spiced vinegar over. Add two or three cloves and peppercorns to each jar. Allow to stand 7 days before use. After 2 to 3 months it will lose its crispness.

Spiced vinegar

Use the same method as for pickled onions but include 1 tablespoon brown sugar and use wine vinegar or cider vinegar.

Cauliflower and tomato pickles (Use with cold meats and salads)

2 medium cauliflowers separated into flowerettes

675 g firm red tomatoes, peeled and cut in quarters

4 medium onions coarsely chopped

1 medium cucumber coarsely chopped

175 g salt

1 teasp dry mustard

1 teasp ground ginger

1 teasp black pepper

225 g brown sugar

1 teasp allspice

1 teasp cloves

1 teasp black peppercorns

600 ml white (or cider) vinegar.

Place vegetables in layers in a deep container with salt between each layer. Pour cold water over, enough just to cover the vegetables. Cover container and set aside for 24 hours. Next day place vegetables in a colander and rinse to remove salt. Place vegetables in a large boiler with the spices. Add vinegar and place over moderate heat until mixture boils. Stir frequently so it does not stick. Reduce heat to low, stir occasionally and cook until vegetables are just tender. Cool. Pack vegetables into jars. Pour in enough of the liquid to cover the contents in each jar completely. Seal and label.

Apple chutney (Use with cold meats, curries)

10 cooking apples, peeled, cored and chopped

5 large onions peeled and chopped

1 kg white sugar or 500 g brown with 500 g white

1 teasp cayenne pepper

3 pints brown vinegar

1 tablesp mustard

1 tablesp pepper

1 tablesp salt

3 cups raisins or sultanas

1 tablesp cloves

Combine all ingredients in a large pan and cook well, stirring occasionally until chutney thickens. Pack into jars, seal and label.

Lemon and mustard seed chutney (For cold meats, curries, fish and eggs)

6 lemons, washed, chopped and seeds removed
(Do not peel)

2 tablesp salt

6 small onions, peeled and chopped

600 ml cider vinegar

2 teasp ground spice or allspice

4 tablespoons mustard seeds

500 g sugar

100 g raisins

Place chopped lemons in a bowl, cover with salt and let stand 12 hours. Place all ingredients in a large pan and simmer until lemons are soft then boil until chutney is thick. (I cook this on Low in a crock pot overnight then transfer to a pan and boil the chutney until thick on the stove top.) Bottle, seal and label.

Orange chutney (for cold meats, curries and eggs)

4 oranges

3 apples

2 medium onions, chopped

1 1/2 cups brown sugar

2/3 cup raisins

1/4 cup ground ginger

1/2 teasp crushed chillies

2 1/2 cups vinegar (625 ml)

1 1/2 teasp coarse salt

1/4 teasp black pepper

Grate rind from the oranges. Remove pith and pips and cut oranges into small chunks. Discard pith and pips. Peel apples, remove cores and cut into small pieces. Put oranges, rind, apples, onions with the rest of the ingredients into a large saucepan. Mix well. Bring to the boil and simmer until chutney thickens. Bottle, seal and label. (Note: this is a very hot chutney).

Spicy red tomato chutney (For cold meats, sausages, curries)

1.75 kg ripe tomatoes peeled and chopped

500 g apples, peeled cored and chopped

500 g onions, peeled and chopped

350 g sultanas

350 g raisins

1 teasp dry mustard

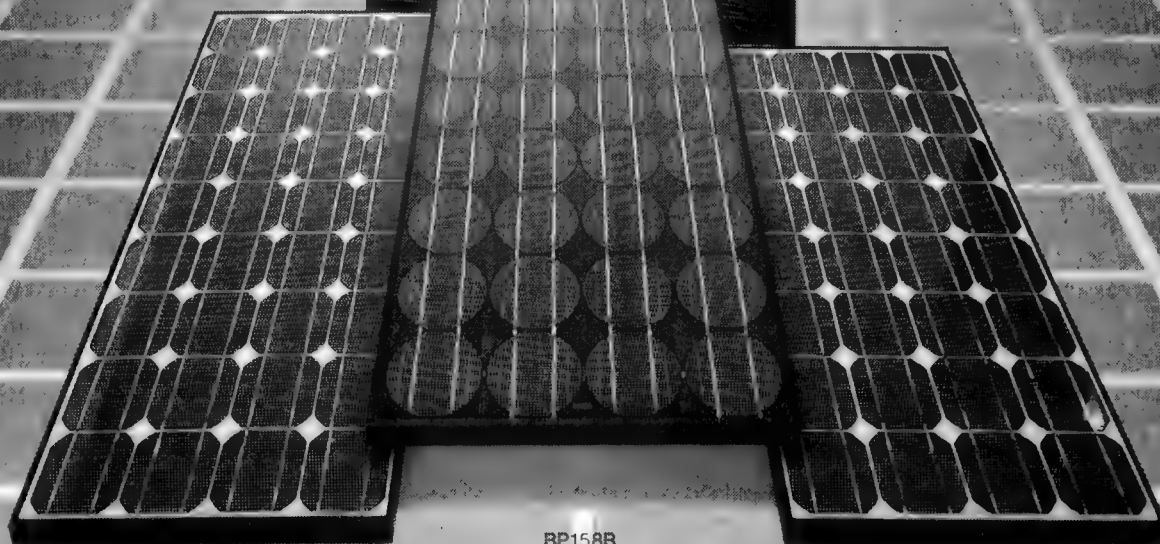
2 teasp allspice

1 tablespoon salt

1 tablespoon cayenne pepper

675 g brown sugar

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A selection of pickles and chutneys from Pamela's country kitchen, displayed at a country market stall.

900 ml vinegar (brown)

Place all ingredients into a saucepan and bring to the boil. Reduce heat and simmer, stirring frequently until the chutney is thick. Bottle, seal and label. (To peel ripe tomatoes: put them into a saucepan and pour boiling water over them. After 2—3 minutes the skins will slip off when handled.)

Sweet and sour tomato chutney (For cold meats, curries, eggs)

3 kg green tomatoes
500 g apples
500 g onions peeled and chopped
750 g raisins and sultanas (mixed)
2 teasp salt
1 teasp saffron powder
1 teasp dry mustard or mustard seeds
2 teasp ground allspice (or Chinese 5 spice)
1 tablespoon cayenne pepper
675 g brown sugar
1 tablesp cloves

Slice green tomatoes, cover with the salt and let stand overnight. Place salted green tomatoes, chopped onion, spices and vinegar in a large pan (or crock pot for 8 hours on Low) and allow to cook until tomatoes are soft. If using crockpot transfer contents to pan for stove top cooking at this stage.

Peel, core and chop apples. Place apples, sugar, saffron, raisins and sultanas in with other ingredients. Bring all of them rapidly to the boil. Reduce heat and simmer until chutney thickens. Bottle, seal and label.

Tomato relish (Use instead of tomato sauce)

3 kg ripe red tomatoes
750 g sugar
2 tablespoons dry mustard or mustard seeds
1 kg onions
2 teasp salt
2 tablespoons curry powder or marsala
Vinegar to cover
Optional: 1 tablespoon cloves, and/or 1 tablespoon peppercorns

Put tomatoes into boiling water for a few minutes so they can be skinned easily. Skin, slice and place in a covered container. Slice the onions and place in a separate container. Place a tablespoon of salt (sprinkled) over each and allow to stand at least 3 hours.

Pour off any liquid in the tomato and onion containers. Place in a boiler with spices and sugar with just enough vinegar to cover. Boil for approximately an hour. Allow to cool, place into jars and label. Note: This is not a thick mixture like chutney.

WHACK-O the woodsplitter

by Alan Thomas

Trentham, Victoria.

'WHACK-O, The Mighty Blockbuster', is a steel-handled wood splitter designed for Australian hardwoods. Many people don't realise that a woodsplitter is a far superior tool for splitting firewood blocks to a sharp axe. In fact even a blunt axe is better than a sharp one for such work. A sharp axe can form a narrow wedge which often gets stuck along the grain of the block you're trying to split.

Using WHACK-O means no more stuck blades or broken handles. This woodsplitter has an unbreakable steel head and handle, and its 5 kg of weight give it the momentum to split large blocks with one blow. WHACK-O is less tiring to work with than an axe because you receive less shock in your arms and shoulders.

John Gilpin, of Hot Drum in Queensland, manufactures WHACK-O in Australia and guarantees each wood-splitter for ten years. He also makes WHACK-O Lite, a lighter and easier-to-handle version for smaller people. John is so confident of WHACK-O that he guarantees to buy it back if after one year you aren't happy with its performance.

How to use a WHACK-O

The WHACK-O is a powerful splitting tool if used correctly. It requires quite a different technique to other splitters that you may have used, and is different from an axe.

Solid base is very important

A solid base is very important to get the most impact from the heavy momentum of the WHACK-O. If the base is the least bit soft, (typically sawdust and wood chips) the wood will 'bounce' enough to dissipate a lot of the power of the blow. But if the wood is caught between a solid, unyielding base, and a solid blow, it must split.

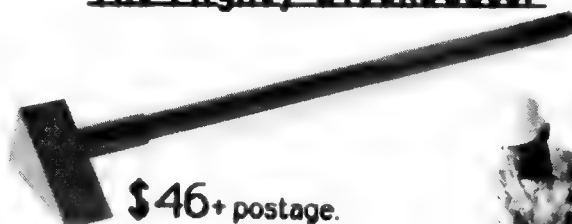
A heavy hardwood block set on well-packed earth, or better yet, on concrete, is well worth the effort of setting up. Ask a local firewood supplier to cut such a block for you. A good splitting block like this will save much more energy than it took to set up. One swing each time instead of several.

Swinging the WHACK-O

Set the wood on the splitting block with the bottom (larger) end up. Face the block front-on, feet apart (always wear steel-capped boots for any wood splitting — safety goggles are a good idea too). Raise the WHACK-O to vertical, hands to eye level. Swing straight down, concentrating on the chosen impact spot. Do not slide hands.

Bend your knees with the swing, and keep your back straight (this means less strain on your shoulders and back). Hit the wood squarely with the entire width of the splitting edge — not just a corner.

WHACK-O The Mighty Blockbuster



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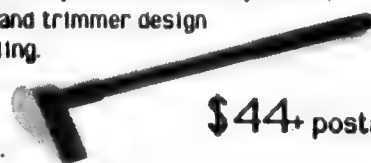
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Down Wallaby Creek

by Jackie French

They do eat blackberries

"**W**E'VE got your goats," they said. "Goats?" I replied. I was working in the restaurant kitchen at the time, putting out banana cream pie. The restaurant was full, and my friends had only just bounded up the path. It wasn't the time to think of goats.

"They're nice big ones," they said proudly.

"Goats?" I said.

"We've put them in the back of your car."

My car is a small brown Honda. A small brown goaty Honda. I took the banana cream pie out to a customer. "I'm sorry," I said, "I've forgotten your Vienna coffee. My friends have just put some goats in my car."

"Goats?" he said.

I went back to the kitchen. My friends were drinking coffee with Caroline, proprietor of the Baker's Paddle and chief coffee dispenser. They were looking pleased with themselves. There was a vague scent of goat in the air. My friends like the smell of goat. They think it's friendly. I was casting back into my mind. I vaguely remembered agreeing with them some time past that goats would be just the thing to get rid of my blackberries. If the goats happened to like blackberries. If there ever happened to be any goats around.

"They were 12 dollars each," said my friends, finishing their coffee and eyeing the orange sour cream cake. "We've spent all afternoon getting them for you. It was hard work. They're stropky buggers."

"Are they?" I asked faintly.

They nodded. "Just let them know who's boss," they said, "and you'll be right. We'd like the chains back when you've finished with them." "They've got chains on?" I asked, vaguely relieved.

"Yes," they said, putting down their cups and preparing to depart. "And collars. You've only got to tether them when you get home. No problem."

I thanked them profusely. They had gone to a lot of trouble. I asked, as a parting thought, "What sex are they?"

"Male. Good big ones. They eat more than females."

"Castrated?" I hoped faintly. "Oh, no," they said, "But it shouldn't be any trouble if you want to. They're about two years old."

Young male goats are sweet and fluffy. Then they become stropky and adventurous. After a year they're just

bastards. They also smell. They also like female goats. I didn't have any. My friends loped off down the path. I went back to work.

It was about 10 when I finished. Caroline suggested I finish early. The goats might be getting bored. They weren't. They were asleep in the back. One opened a baleful yellow eye as though to say, "We've had a hard day. Don't disturb us now."

I slid softly into the car and drove gently across gravel roads and clattering bridges. The goats grunted occasionally. The largest began to snore. It was nearly 11 when I got home and it was dark. I usually don't carry a torch because starlight's enough in a familiar place, but starlight isn't enough to tether goats by.

I opened the back and the goats glared at me. I wondered how to haul one out without the other leaping off into the darkness and I wondered where I was going to tether them. I wondered why I'd been so stupid as to show any interest in goats at all.

The largest descended first. I attached him to a rail around the old broad bean patch. He blinked, sniffed the air, and then galloped off. I waited for the chain to stop him, but it didn't. It snapped neatly midway along. The goat gave a bleat of freedom and pranced out into the darkness.

The smaller one was more subdued and his chain was stronger. He looked at me doubtfully. I looked even more doubtfully at him. I left him on the railing and went to bed. There was no sign of him next morning when I raced out, hoping there weren't two goats rampaging up the gorge.

There weren't. The goat had just hidden down a wombat hole. The wide open spaces seemed to worry him, or maybe it was the mountains looming above, or maybe it was me. I hauled him out by his chain and tethered him on the garden fence near a succulent patch of blackberries. He looked interested, he took a bite, considered, and took another — I went in to my porridge.

It was late when I finished my breakfast; the goat had finished his too. He'd eaten the blackberries in reach, climbed over the fence and eaten a white thryptmene and all the prostrate grevilleas. Later that week a plaintive bleating echoed down the gorge. My son and I wandered up to look: the larger goat had jammed his chain between two rocks. He glared at us as though it was our fault — he had a point.

We retrieved him and I bought the biggest, thickest chain in Braidwood and tethered him on a long wire run

between two stakes near a toothsome blackberry thicket on the way to the hen house. It was a mistake: the goat chewed blackberries thoughtfully till he saw a human in charging distance, narrowed his eyes and rammed. Visitors refused to collect the eggs, and Edward and I went south instead of north on our evening walks.

I'm still not fond of goats. A goat can't compete with a gentle-eyed Jersey cow. Goats are too intelligent. They think, which no domesticated animal should do. They plan and ponder and trip you when you least expect it. No fence is truly goat-proof and no rose bush is safe.

But they do eat blackberries.

Council of all beings

"The pain of the Earth is our own pain, and the fate of the Earth is our own fate."

THE Council of All Beings is a series of re-Earthing rituals created by John Seed (from the Rainforest Information Centre in Lismore, New South Wales) and Joanna Macy, to help end the sense of alienation from the living Earth that most of us feel, and to connect us with new sources of joy, commitment and inspiration from union with Gaia.

Joanna, drawing on her despair and empowerment work, and John on his experience and insights in defence of the world's rainforests, co-created this ritual form in 1985. Since then it has spread to the US and Europe.

Many people intellectually realise that we are inseparable from Nature and that the sense of separation that we feel is illusory. These rituals enable us to experience our connection with Nature deeply, in our hearts and our bodies. Through personal sharing, meditation and ritual, the rituals explore the depths of our concern and love for our planet in this time of crisis.

Rediscovering our 'deep ecology' — our interconnectedness with all beings — we find empowerment as agents of healing change. The central feature of the workshops is the Council of All Beings itself where we step aside from our solely human identification and let other life forms speak through us.

In the re-Earthing rituals, through interactive exercises, guided meditations, despair work and work with body and breath participants practise letting go of the culturally-conditioned competitive, isolated self and come home to our interconnection with all forms of life. We allow ourselves, through group visualisations, to re-experience our four-and-a-half billion year evolutionary journey enabling us to shed our solely human identification and feel deep empathy for the myriad species and landscapes of the Earth.

This gathering also provides tools for practising deep ecology in our daily lives. As many participants in this work have discovered, alignment with our larger identity clarifies, dignifies and heals our personal conflicts. We see that the pain of the Earth is our own pain and the fate of the Earth is our own fate. The Council of All Beings empowers us to act on behalf of the Earth and gives us clarity and direction for this work. In the same fashion it clarifies and orders our patterns of consumption, our needs for intimacy and support and our priorities for action.

John Seed is Director of the Rainforest Information Centre in Lismore. Since 1979 he has been involved in the direct actions which have resulted in the protection of many Australian rainforests. He has travelled around the world lecturing and showing films to raise awareness of the plight of the rainforests. Last year he co-produced a TV documentary about the struggle for the rainforests. He has written and lectured extensively on deep ecology and has been conducting Councils of All Beings and other re-Earthing rituals in Australia and North America for several years. With Joanna Macy and Pat Fleming, he recently completed a book *Thinking Like a Mountain - Towards a Council of All Beings* which will be released by New Society Publishers later this year.

The cost of John's regular workshops vary from place to place, averaging \$100 for those who can afford it, with plenty of scholarships or work exchange available for those who cannot. All money John earns is ploughed back into Gaia via various ecological projects and organisations.

On a recent workshop tour of the United States, John raised money to support three volunteers working with the Awa Indians on the Ecuador/Columbia border protecting their rainforest habitat and their huntergatherer way of life.

John will be conducting workshops around Australia in coming months and can be contacted at the Rainforest Information Centre, PO Box 368, Lismore, NSW, 2480.

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How to Change the World

by Dr Robert Rich

Moora-Moora Co-operative, via Healesville, Victoria.

MOST Earth Garden readers know that humanity is heading in the wrong direction. We are fouling our own nest with our wastes and destroying the resources which keep us alive. Our world is one of increasing violence, alienation and social dislocation. People are unhappy, as shown by indicators such as the rates of stress-related diseases, drug addiction (including alcohol and tobacco) and suicide.

There is now convincing scientific evidence that people with a poor self-image are more likely to have problems with their immune system, including possibly developing cancer. The increasing incidence of cancer, and of auto-immunity diseases, is therefore another indicator that our lifestyle is bad for us. The same is true for changes in social patterns. One in three Australian marriages ends in divorce, yet the end of any long-term relationship causes a lot of pain and suffering.

All thinking people have their own theories on what is wrong with the world. We all think we know what the world should be like to make us happy, and of course, these ideas vary tremendously. Most people are convinced that the path to happiness is through material wealth, but then shouldn't we be much happier than our grandparents?

Regardless of your dream for a better world, it stays a dream unless you do something to achieve it. All past attempts to change the world have used one or more of three techniques. These are force, persuasion and example.

Force

Force is self-defeating as a tool for social reform. Many present and past repressive dictatorships started with high ideals and any study of social history shows us that the use of direct, naked force brutalises and dehumanises a person. It is also addictive: once rulers have a taste for using violence, its use becomes increasingly attractive. The sense of power over other beings is one of the strongest psychological addictions. Also, a movement may start full of ideals, but if it resorts to violence to achieve them, it will attract new supporters who join because they are violent, not because they are committed to the ideals.

There is little need for examples. The destruction of Communism by Stalin is one. Marx's philosophy is best summarised by the beautiful aim: to each according to their needs, from each according to their abilities. However, Marx advocated violent revolution for achieving this. He considered the labour union movement to be misguided, because they sought reform instead of revolution. Seventy

years after the October Revolution, we are still waiting for the Marxist dream to be realised in the USSR: many people argue that Stalin was no better for the Russians than the Tsar.

Manipulation is another form of force. The power broker who pulls strings behind the scenes forces his will on other people. This is the kind of power which is wielded in Western countries such as Australia, where we live in a 'representative democracy'. The lives of many ordinary people change in arbitrary ways to satisfy the whims of a few with power. Even if the manipulators were full of high ideals as well as very wise, they could not possibly anticipate all the effects of their actions. Life is a very complex system, with built-in interconnections — disturb such a system, and you cause ever-spreading waves of problems.

As with direct force, manipulative power is also addictive. In the past, people with the power to rule others eventually lost any wisdom and benevolence they started with, and ended up as despots: true wisdom is humble.

Any reform achieved by seizing covertly the instruments of power will lead to a society where the few rule the many, for their own ends. If you want to create a society where people are free, I believe you must not use force. Naked violence leads to a repressive dictatorship and manipulation leads to inequality and injustice.

Persuasion

Missionaries have caused far more damage than soldiers and traders. The missionary spirit is: "I know what is good for you, and you are going to get it, like it or not." The Spanish Inquisition is an extreme example of this attitude but the missionary causes great harm even when bearing gifts like medicine and education. Indigenous cultures are devalued, leading to the loss of much wisdom which could be useful for all humanity.

The power of advertising in our society is another example. Smoking among teenage girls has greatly risen in the past few years yet, in Denmark, the percentage of smokers in each age group under 30 grows smaller each year. The difference? All direct and indirect tobacco advertising has been banned in Denmark for years. Television advertising campaigns are very expensive. If it's advertised on TV, it's twice as expensive as it should be. Yet the power of persuasion is such that TV advertising sells products.

It is possible to use the same techniques for social reform. This was done with great success to stop the Vietnam War and to save the Franklin. Yet persuasion, salesmanship and the missionary spirit are all inappropriate tools for achieving a better society. This is because our culture is built around it: use it to achieve change, and you end up where you started. Do you want to build a world

where the winner is the one who shouts the loudest, or can hire the most publicity?

Salesmanship in the guise of demagoguery was responsible for the execution of Socrates, it put Hitler in power, and is the major tool used by those in power in America to control their markets — both for products and for ideas. I believe it is the tool used by those in power in the USSR to mould the opinions of those under them, it led to the Great Leap Forward and the Cultural Revolution in China.

It is possible to use it to achieve a conserving lifestyle but the resulting society would still be one in which people are tools for others to use, where individual self-expression and growth are limited by outside forces controlled by a few.

Example

Edward Goldsmith, the long-time Editor of the *Ecologist* magazine, once described the role of leaders in genuine social change. The 'leader' is a person who sees a

crowd rushing down the street, and runs ahead of them shouting "Follow me!" The adoption of Christianity by the Roman Empire is an example of social change from below. At first a religion of slaves and foreigners, then a scapegoat repressed with brutality, and finally a State religion. There are many other instances in history, such as the revolutions against the Hapsburg Empire in the 19th Century.

It is my belief that all positive, lasting reform of society started in this way: a few people daring to make a change and inspiring others until a 'movement' starts and spreads like wildfire. So, if you have a dream for a better world, don't wait for 'them' to do something about it. As the Findhorn people say, "The New Age is now." You can design your ideal world, and try to live it right now as far as your circumstances permit. If your ideas are valid, you will be happier, and more fulfilled. Your friends and neighbours will see the difference. Some of them will be sufficiently influenced to follow your example. If it works for them too, the change will spread.

Growing sprouts for life

by Jose Robinson

Wild Cattle Island, Queensland.

SPROUTS are like people: they need water and air to survive. Many people can't seem to think beyond mung beans or alfalfa to sprout. However, there is a huge variety of seeds which make very interesting and tasty sprouts. Why not try rice, fenugreek, wheatgrass, sunflowers, soy, buckwheat, corn, lentils, barley, oats, chickpeas, rye or linseed. The list is endless.

Some seeds are best suited for sprouting in jars with the rinsing method. Others are better sprouted in shallow trays of dampened soil, and when a few days old, cut off with scissors at soil level. We grow our wheatgrass in trays of 1.5 cm deep soil, and 'mow' it like a lawn using scissors. It will sprout twice to edible height from the one seed.

Everyone appreciates the nutritional value of fresh home grown vegetables. Sprouts are a quick and easy way to gain this nutrition. They are ready in a matter of days and are loaded to capacity with vitamins and minerals. Most sprouts are at their best and the peak of their nutrition after about three or four days. For people in flats and apartments, growing sprouts is an alternative to an outdoor garden.

The best results come from fresh, good quality seeds. You cannot expect top production from seeds that are stale. Most busy health shops and co-operatives stock good fresh seed because their turnover is fast. Sprouts are so crisp and crunchy that they almost squeak when you eat them. They are an excellent source of vitamins A, B Complex, C, D and E and such minerals as potassium, calcium, phosphorus, sodium, magnesium and others.

It is not necessary to buy special sprouting containers. A simple glass jar with a gauze top kept in place with an elastic band does the job. Rinse about a quarter of a cup of seeds with water then soak overnight. In the morning, pour off the water, rinse again and let them stand upturned at an angle to drain completely. Rinse and drain three times a day for three or four days until the sprouts are ready to eat.

In winter sprouting takes slightly longer. Once sprouted the seeds will keep fresh in the refrigerator for about five days, and after that they begin to deteriorate slowly. I prefer to sprout small quantities and have several jars going as a follow-up. We are then eating them at the peak of their nutrition each day. Never freeze sprouts because they lose their crispness. Some people get good results with their sprouts by keeping them in a dark cupboard to begin sprouting. I tend to forget them if they are not where I can see them. I set aside a corner of one of my kitchen benches for sprout bottles and trays, and often have a green nibble as I pass by.

Sprouting may be done in shallow stacked trays, using dampened paper towels, but mould can develop readily from lack of ventilation, so it is not as desirable as gauze covered jars. The other method of sprouting is to use poly food trays with about 1 to 1.5 cm deep dampened sandy soil. Sprinkle the pre-soaked seeds on top of some soil, and mist spray them regularly to keep the soil just damp. The frequency depends on the weather at the time. For the first 24 hours a covering of a plastic bag helps the humidity. Buckwheat, rice and sunflowers are very tasty sprouted this way. You cut the sprouts with scissors at ground level when at their peak of about two to three cm high.

Sprouting seeds is a lot less bother than vegetable

gardening in the outside garden. As well, eaten raw, none of the precious vitamins and minerals they contain are lost. The complete natural energies of the plants are retained. Also, there are no nasty garden bugs stealing a share. Sprouts would be the cheapest fresh vegetable available. Immediately a seed becomes damp, the growing process begins. If the seed is supplied with a regular amount of water, the growing accelerates, especially in warm conditions.

Hard seeds may take a little longer to begin sprouting than softer seeds, although it depends on the temperature. About 20 degrees centigrade is an ideal temperature. The most popular way to eat them is probably as fresh green young sprouts eaten raw in salads, but they may be used in lots of other ways. Mixed with cottage cheese or patés they are delicious. Popped in with most meat and vegetable dishes at the last minute before serving, is another scrumptious way of using sprouts. As a garnishing for fish meals, sprouts are attractive and tasty. They may be put on sandwiches, or mixed in with omelettes, bread or biscuits for

an interesting texture. Some of the larger and harder seeds such as soybeans and chickpeas are also interesting if semi-sprouted. By this I mean they can be used after about two days, when only the suggestion of a sprout is forming. At this stage they have to be cooked of course, but for nowhere near the amount of time required for the dry seed.

Some people tell me they have trouble sprouting soybeans in the humid tropics. They can tend to ferment easily and may need a little extra care to prevent this.

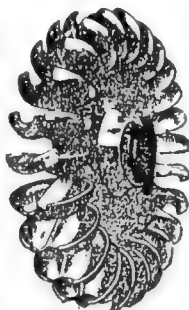
More frequent rinsing is required, and a cooler place is needed for soybeans than for other seeds. Even when sprouted to about 2.5 cm soy beans can still be a bit hard. If you steam them for about 10 minutes just before eating, they are perfect.

Another useful idea is to place sprouts on a window-sill or patio where they can get indirect sunlight, just a few hours before eating. This injects them with instant chlorophyll and can sometimes improve the flavour. If allowed too much sun though, it will toughen them.



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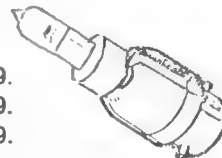
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Season by Season

by Jackie French



T HIS is the planting time, the exciting time, when the ground is warming up and the deep winter shadows are fading. This is the time you plant a packet of lettuce seed and get a glut three months later; when you start lusting after giant tomato seedlings in the nurseries.

Ignore them. They're probably a variety you don't want anyway, they'll have been force grown and won't do much in your cold soil for months, by which time your home-grown seedlings will have spurred up and overtaken them.

Never plant too early. You don't gain anything by it. Even if your early crops stagger through frost and chilly soil those planted later will probably outgrow them. (Of course it's one thing for me to say this. But I bet this year, like every other year, I'll be planting peas a month too early, and cucumber seed that rots in the cold ground and the pumpkins will stare at me with freezing feet as I tuck mulch around them and hope they survive).

There are a few old fashioned tips for judging when it's warm enough to plant hot weather crops. One old lore says to plant tomatoes when the soil is warm enough to sit on it with bare buttocks. In suburban areas use the back of your wrist. Another old saying is to plant corn when the peach blossom falls. I do this every year, and it works, unless of course your peach blossom happens to be frosted off.

Frost

This is the worst frost time: warm days, loving attention from gardeners — all of which promote soft new growth that gets burnt off on clear frosty nights. Frost can set a plant back so that later-planted crops outgrow it. Frost can burn off pea, broad bean and fruit tree flowers so they don't set fruit. In many cases frost can kill.

Elsewhere in this issue are a few tips for reducing frost. Remember, though, that the best frost prevention is choosing a frost free site. Think of frost as a body of cold air flowing like water. It will settle in dips, and is easily blocked by fences and other plants. If frost can drain away it may leave high spots clear, especially if they are north facing and so warmer.

My garden is on a slight slope with a ridge behind. Even in this small area there are enough differences in microclimate for me to grow cherries at one end, where the frost stays till midday, and have avocados fruiting at the other.

What to plant

This is the main crop planting time. You are not only planting now for Christmas, you are also planting for next winter. Things like **silver beet**, **celery**, **beetroot**, **carrots**, **parsnips**, **leeks** can all be planted in one go to see you through the year. Other crops like **pumpkins** and **watermelons** are also one crop plantings so plant enough to pick and store.

Then there are the staggered croppers — **beans**, **peas**, **corn**, **tomatoes**, **zucchini**. I tend to plant a new succession when the first lot is just starting to flower. It works better than planting every two weeks, as, especially early in the season, early and late planted crops tend to catch up with each other and you end up with a glut.

There really is such a thing as a spring flush, a time when growth bolts away overnight. Crops planted then will outgrow any planted several weeks before but you need to know your area to time them.

Most gardens are getting sparse now, so it is worthwhile planting some fast growers to start spring eating. Try **radish**. If you don't like the roots (like me) try cooking them, or eating the young tops like silverbeet or lettuce. **Chinese mustard** (or Chinese spinach or Bok Choi) can be eaten small and young, again in the same way you'd use spinach or lettuce. It's a very fast grower but resists running to seed when it gets hot. **Tampala**, or Chinese spinach, is another fast grower. Use it as soon as you can bear to pick the leaves, though the plant will eventually grow to about a metre tall, when you just eat the leaf tips. Tampala is very tender and delicate — much more delicate than silver beet and suits even conservative eaters.

Try baby carrots, like Amsterdam Forcing. Don't thin them, just pull them as soon as they're big enough. Try cos lettuce: just pull off individual leaves as soon as they are

big enough without pulling up the lettuce, so the rest eventually hearts. You can do the same with Prizehead Red, simply harvest a bit whenever you have a salad. Rocket also gives quick salads but it is a bit pungent and smoky for some tastes. Try soaking it in milk overnight before serving.

Harvests

Organised gardens will have peas and broad beans beginning to crop now. Try picking the tops off the broad beans, lightly steaming or stir frying them and eating them — they're good. It's also a good way of getting rid of aphids on new leaves. Keep a sharp eye on your broccoli — keep picking it every day or it will shoot to seed and the stems will go hard. Once you've picked your caulies don't haul them out, leave them and, like broccoli, they will also produce smaller heads around the scar of the large one.

Keep a close eye on silver beet and celery now. They have to last you till the new lot crops. Mulch them heavily while the soil is still cold to stop it warming up. This will delay their going to seed. Once they do start to seed nip it in the bud, keep picking off the young seed heads (they're good to eat when tender) and the plant will keep cropping till you're finished with it. If you want to stop your carrots going to seed mulch them too — heavily — so that just the tips are showing. Better still, dig them out, cut off the tops and store them somewhere cool, dark and dry for the next month or so.

A few crops you might not have thought of: try growing your own popcorn (available from most seed suppliers). Or ornamental corn, again readily available. Ornamental corn grows in a range of colours: some dark red, some purple, some yellow and white, some several colours all at once. It can be eaten when very young and the top kernels not yet full. Later it toughens, and can be used as a Christmas gift or ornament. Otherwise feed a surplus to the chooks, or grind it for a weird coloured but edible cornflour.

Any area that can grow capsicum can grow okra. It needs at least four frost-free months. Grow it like tomatoes, pick the pods every day while they are tender and use it to thicken soups and stews.

Pests

Pests like soft sappy growth, and this is a good time for it. If you are worried by pest outbreaks in spring try not to water spring crops, don't fertilise them till the spring flush is over, and never give high nitrogen fertiliser. Try to cut down on soft early growth. Later, more even growth won't be so pest attractive and by then there'll be more predators around to deal with them.

This is best illustrated by **aphids**. Aphids are sap suckers, clustering on new, sappy growth, just as it is most vulnerable to attack. Aphids can also transmit viruses as well as cause sooty mould from the sweet 'honey dew' they excrete. Aphid control may be as simple as simply changing your sowing times. The green peach aphid, for example, is a pest of young fruit trees and many vegetable crops,

distorting young foliage. It also may carry the virus potato leafroll as well as cucumber mosaic. (The green peach aphid can be yellow brown or green.) Plants sown in late summer or autumn are less susceptible to the green peach aphid.

The grey cabbage aphid is most active in early to late spring. If you need to protect your brassica crop from the grey cabbage aphid don't plant seedlings till December, and try to avoid sudden growth flushes from intermittent irrigation and fertilisation. Late sowings, for example, November or January, should cut down infestation of the carrot aphid.

Predators

Aphids have a large number of predators, especially birds, ladybirds and their larvae, hoverflies. Unfortunately predators like ladybirds and lacewings probably will not control aphids till summer. The blue green aphid, for example, can tolerate temperatures as low as 2.5°C, whereas lacewings need 6°C and the eleven spotted ladybird 10°C.

Birds and lacewings, on the other hand, can both be attracted to your garden through winter — and so to your spring crops — by having large numbers of flowering plants as well as a good supply of water. And of course, no cats. Cat lovers may see birds in their gardens but they are usually high up, out of cat reach, not down guzzling up your pests.

Even many nectar eaters will attack aphids and other insects in spring — the same time as the worst aphid infestation. I have seen one male blue wren clean up three rosebushes of aphids in an afternoon. A flock of silver eyes will provide control for a paddock of cauliflowers. Like any other predator, birds need a year round food supply: flowering plants for insects and nectar, seeding grasses, as well as protected nesting places and water sources.

Spiders are also an effective aphid predator, and unlike others are less vulnerable to the residual effects of pesticides. Pine wind breaks are said to encourage early lacewing build up. Lacewings are also attracted by **sprays of marmite or yeast**. This may sound strange but try it. It works. Just dilute the marmite till it's sprayable and puff away every morning for a couple of weeks around your pest prone plants.

Controlling sappy growth

Aphids are usually 'flush' feeders, preferring young tips, buds and shoots. Numbers are mostly dependent on the availability of food. If you cut down the amount of new sappy growth your plants produce you will greatly cut down the infestation of aphids, to a level available predators can cope with. This doesn't mean stopping the growth of your plants but simply trying to space it more evenly throughout the growing season, instead of a succulent burst in spring.

Any efficient organic fertilising regime will help with this. Avoid high nitrogen fertilisers, relying instead on the steady release of fertility from decaying organic matter in the soil. Don't use any fertiliser in late winter when there will be excess nitrogen free in spring. Don't water once a

week, or when the soil is dry — constant moisture from drip irrigation and mulch is more effective — and not only in controlling aphids.

It is no myth that organically grown produce has a greater resistance to many pests, including aphids. If you doubt this organise your own trials. Feed one lot of plants with urea and another, across the garden or orchard, with compost. Note the level of pest infestation on each.

Traps

Aphids can be trapped. Try scattering yellow painted boards through you growing area, liberally painted with glue or any other sticky substance. A large number of aphids should be caught. An easier trap involves yellow pans of shallow water. The aphids are attracted by the colour and drown. A little oil can be added to discourage mosquitoes and make the trap more effective.

Repellents

One of the most effective aphid repellents is reflective mulch. This can be bought commercially, or any reflective substance can be used. There is no need to keep it down all the time, only during growing spurts when plants are vulnerable.

Other repellents include barriers of strong herbs, especially rhubarb and marigolds. Aphids are inhibited by nasturtiums underneath them: a useful companion plant in the orchard, where nasturtiums can ramble under trees, but less so in vegetable areas where the nasturtiums may be higher than the plants. If aphids are being carried onto your plants by ants grease banding should prevent them.

Encouraging aphids

Several techniques are almost infallible for attracting aphids. They include:

- Bordeaux and oil spraying in winter. These will kill overwintering predators. Never spray all your trees with bordeaux at one time — spray half, wait two weeks then spray the rest, so a remnant of pests and predators survives.
- high nitrogenous growth in poor soil. This promotes soft, sappy, aphid-attracting growth
- monocultures: plants of the same variety, age and susceptibility are more likely to suffer severely from pests, with less reprieve from predators. Predators need a constant food supply which a one crop situation won't give them.

If you are really troubled by aphids, that is, the aphids are really damaging your plants, the tips are dead and black — not just you can see aphids clustered on your roses — try the following.

Remember though, **organic sprays do not persist**. You may kill your aphids one day, and find more have infested your plant the next. This does not mean the spray was ineffective, just that your plant is pest prone, or that seasonal conditions favour the pest. Spray again.

Clay spray

A dilute solution of clay — just add water till you can spray it — can be used over aphids and caterpillars. It is more effective on the former. It has no residual effect, of course, and must be repeated every couple of days till the predators increase and start controlling the aphids instead.

Glue spray

This is an excellent spray to try before you resort to pesticides. A weak solution of water-soluble glue will suffocate many small insects and their eggs, particularly aphids and thrips. It flakes off when dry. Flower and water glue can be made for this purpose.

Oil spray

Oil sprays work by covering insects or their eggs with a light film of suffocating oil, especially in winter when the outsides are more porous. Oil sprays cause leaf damage over about 24°C. Take a kilo of soap for every eight litres of oil. Boil and stir vigorously till it dissolves. Dilute with 20 times the volume of water. This spray separates quickly — don't store once it has been mixed with water.

Stinging nettle spray

Cover nettles with water, leave for three weeks or until the liquid is pale brown to green. This can be diluted with two parts water and used for aphids. It is also a valuable foliar fertiliser and an excellent tonic for your plants — use it freely. It may also make you plants less frost prone.

Wormwood spray

This will both kill and repel aphids. Cover leaves with boiling water and leave for three hours. Dilute with one part spray to four of water.

Turnip or parsnip spray

Turnip spray kills pea aphids, red spider mites and flies. Parsnip spray kills mites and pea aphids. Blend roots with just enough water to make this possible, let stand overnight in a sealed container, filter, and add an equal quantity of water spray. Neither spray is poisonous to humans or animals.

Lantana spray

This is effective against aphids. Boil 500 g leaves in a litre of water. Strain and spray.

Rhubarb spray

This is poisonous. It should be used as a last resort if other sprays fail to work. It is also harmless to bees and breaks down quickly. Boil 1 kg leaves with three litres of water for half an hour. Add enough soap to colour and dilute with equal proportions of water before spraying. Keep out of the reach of children and label POISON.

Controlling pests with flowers

There are several ways that flowers help repel pests, making plants healthier, for example: try plant 'tonics' like chamomile or borage around your crops, and yarrow or chamomile lawns and paths.

Flowers (or their associated bacteria) can act as 'nitrogen fixers': woad (a sweet annual and source of blue dye — see EG 54), broom (try sterile varieties in a range of colours (broom is also a good fire break as it won't burn), lupins (annual or perennial), and sweet peas. Other flowers, like alyssum, may simply form non-competitive mats under other plants, helping to keep weeds down and moisture in, as well as providing humus as their leaves break down.

Some flowers deter pests, by disrupting the visual or chemical clues that help pests find the host plant. Nasturtium, for example, inhibit aphids and woolly aphids in the orchard, and marigolds repel white fly. Nasturtiums also repel aphids flying above them, cedronella, or balm of gilead — a small bush with ferny leaves and pink flowers, wonderfully lemon scented — repels mosquitoes as well as other insects. Pyrethrum or Dalmatian pyrethrum (*chrysanthemum cinerariaefolia*) or feverfew (*chrysanthemum parthenium*), with its small yellow and white flowers, are excellent pest repellents.

Other flowers attract predators. Not only humans like flowers. The adult stage of many of garden predators: wasps, hoverflies and lacewings, need flowers to feed on. Have flowers through winter, especially native shrubs, and you'll have predators in spring.

Many insect eating birds, too, will be attracted by a

range of flowers. Many nectar eaters eat insects when they are nesting, in fact all the nectar eaters here eat insects at one time or another, especially if their is a glut, and flowering plants attract insects, so of course you get insect eaters too.

The flowers in your garden need not be ornamentals. Flowering vegetables and herbs are also excellent for pest protection. Flowering parsnips help repel codlin moth — let them go to seed once and you'll always have them, poking up all round the orchard. The soft green leaves and yellow button tansy flowers are a general insect repellent — plant tansy in pots and bring it wherever needed. Do the same with other herbs like rosemary, lemon balm, wormwood and sage. All these are prolific flowerers, and all attract bees and other insects.

Don't underestimate flowers. At the moment our iceberg rose by the front path is just budding. Other roses get aphids but this one never seems to. This rose is shadowed by a thryptomene bush that flowers all through autumn, winter and spring, and underneath it a strange orange flowered sage rambles down the bank. The rose is always surrounded by flowers, and by birds — the yellow robins that nest in the wattle above it, the New Holland honey eaters, shrike thrushes, blue wrens and eastern spinebills poking their bills down the sage flowers.

This is the time to let last year's crops flower, instead of hauling them all out. This is the time to be planting flowers — native shrubs for winter flowering (most garden predators are natives too), and annuals for that far off mid-summer heat. Happy blossoming.

NEXT ISSUE: growing your own pesticides.

An African village in Melbourne

AN EXPECTED 12,000 Victorian schoolchildren will help build an African village as part of an educational project being run by the aid agency, Community Aid Abroad (CAA). The children will be up to their knees and elbows in mud while learning to construct traditional African 'tukuls'. The 'Into Africa' project is designed to provide insights into African architecture and village systems, and in the process debunk a few common myths about Africa being a continent of famine and despair.

"We are aiming to provide a more positive understanding of Africa's environmental and human struggles," said 'Into Africa' Co-ordinator, Maree Keating recently.

The tukul design

The beauty of the 'tukul' is its simple and practical design. It consists of a round bamboo and mud frame topped with a dome-shaped, thatched roof. During each two hour building session the children will follow the traditional steps to build the 'tukul'.

Firstly a circle five metres in diameter is etched out on the ground. Next, two metre high bamboo supports are driven into the ground at half metre intervals. Spaces between the supports are then filled in with upright bamboo poles set closely together. Thin saplings and twigs are woven between the poles, reinforcing the structure.

Then it is time to assemble the roof which is done on the ground and lifted onto the structure. To build the roof a circle of six metres diameter is etched out. Bamboo poles placed 30 cm apart are tied in the centre of the circle, forming a 50° angle with the ground. Saplings are woven between the poles, strengthening the structure. Twine or wire is used to strengthen the joints. The roof is then lifted onto the supporting frame of the hut and tied securely with jute.

Mud packing

The next stage is the mud packing. Adobe plaster is packed into the supporting frame of the hut to a height of 20 cm. It is left to dry solidly and then applications continue

until the supporting walls are covered.

When the walls have dried solidly it is time to start thatching. Traditionally, one metre lengths of 'sumbalit', a sturdy African straw, are gathered into 20 cm bundles. Starting from the bottom, the bunches are spread slightly and sewn into the roof frame with jute. This continues until the roof is covered with a generous thatching. It is important to thatch from the bottom of the roof up, to increase the protection from rain with overlap.

The tukul is now finished. The entire process takes a few days. Tukul building is a fun and interesting way to introduce children to traditional African building techniques. The process illustrates how resources from the environment are used by the community and teaches African values such as co-operation and appreciation of the environment.

CAA, Australia's longest-established independent aid agency, will conduct the 'Into Africa' project at the Centre for Education and Research on Environmental Strategies (CERES) in Brunswick, Melbourne.

The village experience

Already, 90 school groups have booked themselves 'Into Africa'. During two daily sessions, five days a week, schoolchildren will share in the unique village building and cultural experience. Nomadic and agricultural dwellings will also be built and groups will be guided through various activities. Children will participate in African song, dance, planting, harvesting and traditional handicraft. These skills will be taught by Africans working on the site.

Building 'Into Africa'

The project is expected to run for at least six months and the first school group will begin building on 3 October. Before this day CAA staff and volunteers will have erected two model structures as examples for the children to follow.

•continued on page 56

into Africa

A Community Aid Abroad education project
supported by the Ministry of Education



EARTH GARDEN REVIEWS

Edited by Sophie Masson

Naturally Dried Fruit,
by Helen R Poyntz,
available from 'Fosnez',
RMB 1182,
Wooragee, Vic, 3747.
Price \$9.00 posted.

THIS book is written by an Earth Garden reader who has been sun-drying her fruit for some time. It is an attractive production, full of handy hints to preserve fruit by sun-drying them, and also includes a number of lovely recipes to use the finished product. Helen Poyntz goes through a number of fruits, including soft fruit and berries, and also explains how to make 'fruit leather' from them.

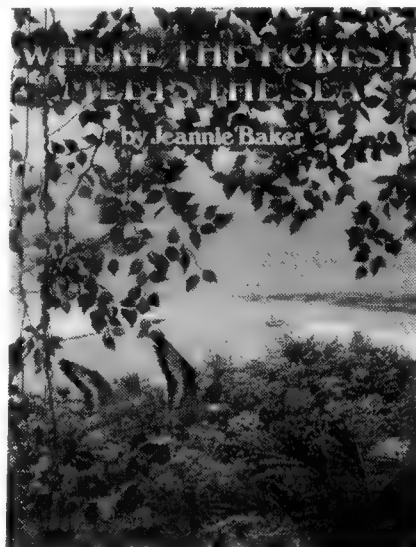
This is certainly a marvellous way for using all the surplus fruit you may have, and is a wonderful addition to the diet, and a reminder of warmer times in the winter.

As the author says, trying to preserve fruit often meant "There was jam coming out of our ears." Here's another way to keep the goodness, colour and taste of fruit.

The recipes, too, are most appetising, and include fruit jellies, sherbets, cakes, custards, and puddings. They're well worth trying. Write to Helen at the above address to get your copy.

**Where the forest meets
the sea,**
by Jeanie Baker,
Julia McRae Books,
rrp \$14.95 (hardback).

THIS is a beautiful book that, although published for children, will give pleasure to everyone. It's a plea for the wondrous beauty of the Daintree rainforest in Northern Queensland, where the forest does indeed meet the sea. Jeanie Baker has combined a simple, yet effective text — a small boy going on a fishing expedition with his father in the Daintree — with her beautiful collage pictures that look real enough to touch. The collages are made by using natural materials — scraps of bark, leaves, cloth and sand and they are truly magnifi-



cent. There are lots of things to look for in these pictures, including my dinosaur-obsessed daughter's favourite find of a diplodocus lurking in the forest, and they convey sound and smell and texture in a remarkable way.

The final picture, where we see, superimposed on the paradisaical setting, what could be done with the Daintree, is saddening, and, let's hope, a salutary warning. Recommended for children and adults. Even if you don't have children, it's worth buying for its wonderful pictures.

The Southern Sky,
A practical guide
to astronomy
by David Reidy
and Ken Wallace,
Allen and Unwin,
\$19.95, soft cover.

HERE'S a book for all you frustrated sky-watchers. The night sky in the country, especially, is a marvel, with its millions of objects to spot, from comets to huge stars, from the death throes of a star to

the strange phenomenon of stars low on the horizon flashing through a number of colour shifts, through white and yellow to red.

But often, we don't know what we're looking at, what to look for, how to explain. And many of the astronomy books available are written primarily for the Northern Hemisphere. This book focuses on the wonders to be seen in our southern skies. The authors take us through a number of topics — what equipment you need, observation skills, taking astronomical photographs, and a lot of information about our celestial beings. It's written in a very clear and interesting way, and there's lots of detail. Astronomical concepts such as red and blue shift are explained, and there are lots of black and white photos (unfortunately, there are no grandiose colour photos). This is a good book to give to any skywatch enthusiast, or to buy for yourself.

Earthworms for gardeners and fishermen
Practical hints for budding and grafting fruit and nut trees
Some Avocado varieties for Australia
all published by the CSIRO).

A GREAT neglected source of books for Earth Gardeners exists within the CSIRO. This organisation publishes a number of books of great interest in many areas — gardening, preserving, agriculture and astronomy. They are well-produced, clear books at reasonable prices. The three books reviewed here are only some examples of the range. The

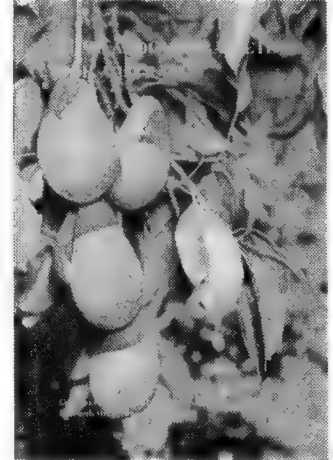


CSIRO publishes a free glossy catalogue of their publications (write to CSIRO Publishing Unit, Box 89, East Melbourne 3002.

The earthworm book costs \$2.50 and has 31 pages. It is well set-out, with a number of chapters detailing such things as earthworm species, effects of worms on soil, likes and dislikes, how to grow worms, the biology of the earthworm, practical hints on vermiculture and compost, identification of earthworms, and lots of other topics. This book would certainly provide enough information for anyone interested in growing worms in the garden or for fishing. It has lots of black and white pictures.

The grafting and budding book sheds a lot of light on a difficult subject. Many people would like to vary and enlarge the range of their home orchards, but are not sure how to

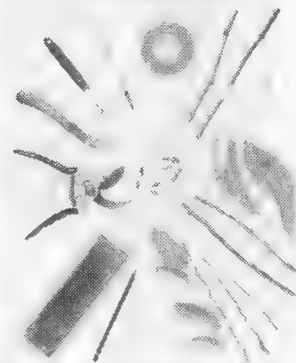
go about it. Well, here's how. The book, which has 31 pages (is this a CSIRO standard?) costs \$5.00. It has general information on budding and grafting, including how to use tools, and techniques such as patch bud, whip and tongue graft, and a whole host of other mysterious practices. There's also information on crops like cashew, citrus, stone fruits, mango, and many others. It's well worth buying.



The third CSIRO book is of special interest to Earth Gardeners living in the sub-tropics and tropics, as it deals with suitable avocado species for Australia. This book has 35 pages and costs \$4.00. The book first sets out notes on the establishment and maintenance of avocado trees and crops. Rootstocks and maturity are also discussed. The author discusses a number of varieties, including their planting, cycle, advantages and disadvantages, and origin.

Each variety features in colour photos, showing leaf, whole fruit, segmented fruit, and seed. All the avocados mentioned have green skin; the purple-skin variety we get early from Coffs Harbour and such places, is not mentioned. A pity, because this variety is extremely tasty. For those wanting to grow avocados in a small or big way this book is a good start.

Practical Hints for Budding
and Grafting
Fruit and Nut Trees



Commonwealth Scientific and Industrial Research Organisation, Australia

EARTH GARDEN UNCLASSIFIEDS

Unclassifieds are 24 cents per word, prepaid. The deadline for the next issue is 23 September.

THE AUSTRALIAN HERB SOCIETY INC. Members receive a quarterly magazine, access to 'seed bank' and extensive tape lending library, free to members. For application form please write to: The Secretary, PO Box 110, Mapleton, Queensland, 4560.

BIO-DEGRADABLE/NON-MAINTENANCE SEEDLING PROTECTORS. Protect your new trees from animals for as little as 10 cents each. For more information send SAE to International Reforestation Suppliers, PO Box 67, Bruthen, 3885 or ph (051) 575 562.

HOME STONE FLOUR MILLS. Mill your own stoneground wholemeal flour for cakes and bread at home with a Retsel Little Ark Stone Flour Mill. "Endorsed by the Housewives' Association". Write for catalogues to: Retsel Distributors, PO Box 712, Dandenong, 3175, enclosing three postage stamps, or telephone (03) 795 2725. Distributor inquiries welcome.

NATURALLY DRIED FRUIT — Make haste, don't waste. A book of ideas about natural sundrying of fruit using no chemicals, including recipes for using the finished product. \$9.00 posted. Helen Poyntz, FOSNEZ, RMB 1182, Wooragee, Victoria, 3747.

KINGS SEEDS — 440 varieties — Herb, Flower, Oriental and Gourmet Vegetables, and Dried Flower seeds. Send \$5.50 (P & H incl) for our colourful 1987-89 catalogue and 1988 supplement. Supplement only — \$1.00 posted. Send SASE for price list and order form. Wall charts on using herbs — \$3.75 each plus \$2 P&H per order. **KING HERB SEEDS,** PO BOX 14, GLENBROOK, 2773.

LA MANCHA RECIPES. 70 low-fat easily prepared vegetarian recipes. 42 pages. Send \$4 to La Mancha Health Centre, Wollongbar, 2480.

THE VEGETARIAN INFORMATION CENTRE has one of Australia's largest ranges of vegetarian books, cookbooks and health books. Write to PO Box 440, Richmond, 3121 or telephone (03) 862 1686, for a free catalogue.

GRAIN For your bulk chem-free grain requirements please contact Mary or Tim of Mary's Organic Fruit and Vegetable Suppliers. We are also interested in hearing from you if you have organically reared livestock for sale. Please write to 7 Bega Rd, Northbridge 2063, Sydney or ring (02) 958 3947.

SPICES, CURRY POWDERS — Let the postman bring the flavours and aromas of Asia to your kitchen. Over 50 spices and premium spice blends available mail order. Send a stamped addressed envelope to: Queensland Spice Suppliers, 46 Wongawallan Rd, Eagle Heights, 4271.

VEGETABLE AND HERB SEEDS. Send a 37 cent stamp for price list to Ettieville Farm, PO Box 314, Richmond, NSW 2753.

GOING TO EXPO? You need Keith & Irene's **BRISBANE BOOK**, 80 pages EG format of Brisbane at its best. Sights, eats, shops, hotels, RACQ maps, colour section, illustrated. Price \$5.95 from Smith's Guides, PO Box 378, Epping, NSW, 2121.

RAMMED EARTH COTTAGES are much better than mudbrick, especially if rammed with a powered rammer. Easy to handle, shaped head attached, assistance with cottage and form work design, site planning and methods advice. Phone Blue Mountains (047) 877 432.

YOUNG WOMEN INVITED to experience Christian communal living on rural property for one week or longer, September 5—30. Opportunity for holiday and to explore prayer, gardening, crafts etc . . . Food accommodation free. Write to Sister Helen, Dondingalong, via Kempsey 2440 or phone (065) 699 244.

LA MANCHA HEALTH CENTRE Wollongbar 2480. Professional help with medical problems, or healthy holiday. Low rates. Phone or write for brochure (066) 295138.

SAVE AND DO IT THE QUICK BRICK WAY. Quick Paver, Quick Brick and Quick Form (in situ block maker). The fastest and easiest machines available in Australia. Send SAE for brochures to Quick Brick, PO Box 627E, Gympie, Qld 4570 or phone (071) 827 099. You can do it yourself the Quick Brick way.

ORGANIC NON TOXIC PAINTS, Varnishes, Polishes and Wood Preservatives. Bio Products Australia P/L, 25 Aldgate Terrace, Bridgewater, SA 5155. Telephone (08) 3391923.

ORGANICALLY GROWN POT POURRI (lavender, lemon verbena, roses plus many other fragrant plants). Bulk — 100 gm — \$10. Lavender and lemon verbena sachets with lace and ribbon — \$4 each. Handmade 'sheep' brooches — \$2 each. Owl brooches made from handspun wool — \$2 ea. Postage paid on orders over \$10. Payment with order please — Jenny Magner, Leefield, Tenterfield 2372.

LETS GROW GARDEN CLUB. A new correspondence club, with Glen Heyne, John Mason, Graham & Sandra Ross and Mike Keelan. **BENEFITS INCLUDE . . .** *Subscription to Gardenscene (usually \$27) *Mail order catalogue *Exclusive plant and seed collections *Workshops, courses, tours and holidays *Special discounts - books, tools, products etc. Send \$30 annual subscription to 'Lets Grow', The Garden Cottage, Malmsbury Rd, Daylesford, VIC, 3460.



LAND LINES are for people buying, selling, seeking or sharing houses and land. It is your responsibility to check all deals. We charge a rate of 24 cents per word (prepaid) for a listing of any desired length, plus \$20 for a professionally-drawn illustration to go with your ad, taken from any old tatty photo you care to send us. All **LAND LINES** must include your name and address (phone number is optional). **LAND LINES** for the October issue should arrive (at PO Box 188 Moreland, 3058) by 23 September.

THE LILLIFIELD COMMUNITY has 330 acres of beautiful land in the hills between Lismore and Murwillumbah. It's about 15 minutes from Nimbin and an hour from the coast and is fully approved by the local Council. Overall, the land is owned by an incorporated company but each member has shares which give entitlement to about 4 acres for private use. In addition, members share in over 100 acres of common land which is available to all for recreation, forestry, agriculture, etc as well as having the use of the community Meeting House, the tractor and other equipment. The Daystar Rudolf Steiner School is located on adjoining land. The basic framework of roads and dams has been completed and our membership has been substantially established. Now we are looking for about ten more families to take us into the final stage of our developing community. People who will respect this beautiful land as well as each other. The share price of \$15,300 per household entitles you to all community facilities as well as to possession of your chosen 4 acre site. If this appeals to you please write to: "Lillifield", Lillian Rock, 2474, or phone (066) 897 224 or 897 323.

FOR RENT: Blackwood cottage, situated on sunrise farm co-op in East Gippsland. One bedroom and loft, \$45 weekly and bond. Suit motivated semi vegetarians keen on wood chopping and must have a caring attitude. Single persons on dole need not apply (not enough income). Genuine enquiries only. Neil Hanna, 172 Hazeldene Road, Gladysdale, Victoria, 3797, telephone (059) 666337.

8 MILES FROM BUNDABERG 588 acres freehold for sale—loamy soil. Suit cattle and small crops. 20 acres cleared, cattle yards, 2 sheds, 2 dams, well fenced. \$160,000. Phone after hours (071) 715 636 or write Mt Perry Road, Oakwood, Bundaberg, QLD, 4670.

MARY FARMS, NTH QLD CO-OP. 125 km north of Cairns. 80 acre organic tropical fruit farm. Excellent road access, established orchards. Seeking spiritually minded people. Vegetarian and drug free. Shares at \$30,000 each. For more information: L and M Lantman, PO Box 123, Mt Molloy, 4871. Phone: (070) 943125.

50 KM NORTH OF GYMPIE, QUEENSLAND, 24 acres, three cleared. 3 bedroom 16 sq home, shed, dam, 5000 Gl tank, some fruit trees and bananas, State school close, bus to high school. Price \$52,000. Contact Box. 7132, Cairns 4870 or (070) 559743 AH.

BRIAGOLONG, VICTORIA. Beautiful secluded valley with owner-built home almost completed (certificate of occupancy is issued). 14 acres freehold on cluster subdivision of 136 acres. Only 12 mins to town and handy to the High Country and Gippsland Lakes. Home power system included. \$58,000 neg. Phone Chris and Rhonda Lawless on (051) 455 370.

KILLARNEY, JEWEL OF THE DOWNS. 80 acres, secluded, spectacular views, 95 years old 2 b/room colonial in good condition, solar power (240 volts), septic and phone. 8 acres pasture improved and fenced, dam, balance rainforest and eucalypt, wildlife, good access. \$65,000, D & I Yarroll, 4/12 Federation Ave, Broadbeach 4218, (075) 503226.

NEAR NIMBIN. One share left in 10 share M/O on 135 acres, offering 7½ acres, plus 50 acres commons; beautiful views, rainforest gullies, fertile arable soil, good house site, maximum privacy. Secure company title. \$13,500. Write to Mark, C/- Neighbourhood Centre, Nimbin, 2480.

DENMARK, WESTERN AUSTRALIA. Established rural Community of 13 households on 64 hectares mixed Karri forest and pasture. 14 km west of scenic town, 4 km to unspoilt beaches in National Park. A Mudbrick house for sale (\$40,000) \$7,000 per household membership fee. School bus to property. Further information: Write Secretary, The Wolery, RMB 1050, Denmark 6333 WA. Phone (098) 409387.

TUMBARUMBA, 295 ACRES \$60,000: Located about 8 km from the Southern NSW town. Heavily timbered with some clear areas, springs, a small dam and abundant wildlife. Panoramic views of the Snowy Mountains possible with some clearing. Phone Ian (069) 251721.

NORTH WEST VICTORIA. 21 sq 4 BR home for rent, purchase option if desired. Newly renovated, stands on 3/4 acre. All services, poultry shed, established fruit trees, other plantings proceeding. Ideal for self-sufficiency programme. Details from Laurie (03) 8781820.

BURRAGATE, 35 km west of Merimbula on SE coast of NSW. 27 acres on Towamba River, mostly a steep wooded gully, with 1 acre of fenced irrigated river flat, small cropped organically. Pump, 5 hp rotovator, mower etc included. Good homesite views. Neighbours share access. \$33,500. Write: Land PO Box A534, Sydney South, 2000.

RAINFOREST FIELD-STUDIES PROJECT. Opportunity to assist in establishing and investing in an environmental education centre on a magnificent property adjoining the Nightcap National Park in NE NSW. The centre will provide visitor accommodation as well as demonstrate, by example, rainforest ecology, reforestation programmes, alternative building techniques, etc. Long term participation and employment would be available for anyone who is interested in conservation, a creative lifestyle, and have some funds available. For further information please contact Andrew Reimanis, PO Box 379, Mullumbimby, 2482. Ph (066) 840143.

LAMB ISLAND, QUEENSLAND. Attractive, comfortable 2 bedroom cottage, well furnished, huge open living area. Power, phone, water. Idyllic island in Morton Bay, 50 minutes to Brisbane. \$35,000. Phone (075) 495061 or visit 130 Leonie Crescent. Jan Kilmartin, 130 Leonie Cr, Lamb Island, 4165.

CARETAKER WANTED. Alternative lifestyle bushland property near Sydney. Rent free for services. Interest in garden, animal, craft, simple lifestyle. Suit young couple or singles willing to share. Write to caretaker, Box 184, Panania, NSW, 2213.



WE HAVE bush blocks with ample water in the wilderness area between Eden and Bombala. From 40 acres for \$22,500. Please ring Nancy on (047) 84 1020, or write to "Bush Blocks", PO Box C63, Clarence Street, Sydney, 2000.

HIGHLANDS, Victoria. Coorabin Co-operative is a new community establishing in the granite hill country two hours north of Melbourne. Most of the 370 acres is bush with creeks, dams and abundant wildlife and adjoins the Switzerland Ranges Flora Reserve. A maximum of 18 households in three clusters is planned. Major interests of members include conservation, co-operation, sustainable human settlement and owner-building. We are now increasing membership from nine to our limit of 18 shareholdings. Interested people are invited to write for information to Coorabin Co-operative, 7 Shirley Court, Boronia, 3155. Or phone David Farrow (03) 419 1788 BH.

MURWILLUMBAH AREA. Shares in Council-approved Hamlet Development. Approximately 12 acres each. Majority beautiful rainforest setting with absolute privacy assured, others partly cleared with magnificent views. All weather access. From \$17,500. Write to: Palmview, 50 Poynton Street, Hughes, 2605, or phone (AH) (066) 793333.

SCHOOL TEACHER WANTED. An alternative lifestyle group is looking for a mature, preferably male, primary school teacher/tutor with knowledge and perhaps practice of Rudolf Steiner's education principles. The teaching would take place in a rural area (open forest, unpolluted environment). Vegetarian (raw) meals are being prepared. A love for classical music and or playing an instrument is a must. The salary is to be negotiated. All applications will be answered. Contact address is: "Grass Tree Blossoms" PO Box 474, Kuranda, 4872, Qld.

DARLING DOWNS - CHINCHILLA QUEENSLAND. 266 freehold acres, chemical free. Mature timber, light scrub, some cleared. Ideal goat breeding property. Sheds, solar power, goat pens, 5 large dams. Established orchard. Urgent sale. Bargain at \$57,500. Would exchange for house or property within 100 km Perth. Please write Box 403, Chinchilla, 4413.

FAR SOUTH COAST, NSW, WAPENGO. For sale, 12 acres timbered land adjoining State forest with approx 3 acres fertile creek flats and permanent water from creek. Power on site. 500 metres to school bus service. Close to Coast and National Park beaches. Good access from Tathra/Bermagui road. \$41,000. Phone Neil or Heather on (064) 941507.

IF YOU ARE FAMILY ORIENTED with young children and see yourself as practical, self-reliant and tolerant but can see the value of sharing, we would like to hear from you with the view to establishing a viable rural based lifestyle. We know we could do it by ourselves but want the advantages of involvement particularly for our children. If you feel the same please write: John and Barb, Lot 33 Fernhill Rd, Mt Evelyn, Vic, 3796.

ACCOMMODATION in return for light gardening and maintenance on remote bush property. Permanent or occasional basis. Own vehicle essential. Contact Heather Pearce, Box 171, Ravensthorpe, WA, 6346.

ULAMAMBRI VIA COONABARABRAN. Renovated 2 BR cottage on 3 acres river loam, plenty water, power, phone, sealed road, AG pool. \$30,000, telephone (068) 427 874.

HALF SHARE in 300 acres 15 km from Murwillumbah. North slopes of Mt Warning, secluded valley, borders National Park. Creeks, rainforest, includes timber worth selling. Views of nearby ranges, fruit trees, bananas, paw-paws, terraced garden, 4 WD access only. \$40,000. Phone Barbara (02) 411 4904 or Manfred (066) 795382.

ROSEBERRY CREEK, KYOGLE, Northern NSW. Community est 1978. 1/9th share in 513 acres, farmhouse, dairy, workshop, tools. Combines benefits of community lifestyle with own quite secluded house site and private or community access. Double creek frontage backing onto State forest. Tropical and citrus orchards, large hydro-power dam and underground pipe line to creek. Large pole frame with all materials on site to complete including 7 sets French doors, large amount T&G flooring, Chamfer boards and much more. School bus. \$23,000, ph Karen or Gary (066) 669166, write Whiporie Post Office, 2470.

GOOMBURRA VALLEY. 36 acres, 2 hours west of Brisbane. Bitumen road, power, phone, school bus available. Dam and some fencing. Owners need to sell urgently. \$15,500. Write to D Spearritt, 'Skyweir', MS 224, Carey Road, Withcott, 4352, or leave phone message on (076) 355084.

BLOOMFIELD (Ayton) 190 km north of Cairns. One of few freehold properties between Cedar Bay and Cape Tribulation National Parks. 131 acres. Views (1.5 mile mouth) Bloomfield River and Weary Bay. Unpolluted perennial stream, \$136,000. Edward Kubicki, (070) 532420 (leave name and number, will ring back) or 3/23 Victoria St, West End, Brisbane, 4101.

TABULAM AREA, 1 hour west of Casino. 100 acres of undulating land and creek flats, 40 acres cleared, rest natural bushland. Permanent creek frontage plus natural springs. Good home sites and there is a small hut on the property. Has to be seen to be appreciated. \$28,000. R Barton, 20/14-16 Factory Street, Nth Parramatta, NSW, 2151.

NORTH OF NIMBIN NSW. Rural retreat on picturesque 5 acres, rustic cabin, SC stove with hot shower/bath, water pump, gas fridge/cooker, plus rainwater tank. The verandah overlooks creek with tortoises, platypi, wildlife abound, fruit trees, natives, undulating grasslands, \$42,000. Nadine (066) 897320 or 8401 24.

WANTED: Land in WA's South for two couples to buy, cash to \$30,000. We will be down from up here Nov-Dec '88 and don't intend living on it for a few years so we can get houses etc started. Anyone with any ideas or land for sale please write. Craig and Jess PO Box 1070 Kunonurra, WA, 6743.

BRUTHEN VICTORIA, 5 blocks, 5 to 30 acres, 1/2 bush/cleared, SEC, fenced, backing onto State Forest. Two miles to river, from \$26,000. Ph (051) 575 562.

SUBSCRIBERS ARE SUSTAINERS

*See page 56
for sustenance details*

•continued from page 49

Community support

A great deal of enthusiasm and support for 'Into Africa' has come from the Victorian community. People have responded generously to CAA's appeals for help with the project. The African community have donated many hours of consultation and advice and over 80 volunteers have offered their services to the project. A \$5,000 grant has been provided by the Federal Government and the Victorian Department of Conservation, Forest and Lands is helping to locate timber for building.

Several companies have donated materials: Australian Paper Mills have given \$1500 worth of pinewood, Arnold's Fencing Co has donated fencing and Humes

Plumbing have contributed piping. As well, the Ministry of Education has generously supplied a portable classroom for the project — and endorses it as a sound educational activity.

There are still many materials needed and CAA is appealing to the community for help. The priority at the moment is locating straw for thatching. Triticale or a similar sturdy straw is needed so that the roof will be rainproof and have a 'traditional' appearance. Donations of clay, African plants, seeds of potato, pumpkin and corn, hessian bags and saplings would also be appreciated. 'Tukul' building requires saplings of two and a half, four and six metre lengths.

If you would like to know more about the project, help to build it or assist CAA in finding materials, you are invited to contact Maree Keating, Into Africa Co-ordinator, on (03) 419 7111(BH) or 486 2174(AH).

Please allow 2 to 3 weeks for delivery.

BOOKS & ISSUES

BOOKS EARTH GARDEN, PO Box 188, Moreland, Victoria, 3058

All prices include postage

ENERGY WORKS! — \$19.95 \$.....

Earth Garden Building Book — \$24.95 \$.....

HARD TIMES HANDBOOK — \$13.00 \$.....

EG binders (hold 12 copies) — \$25 for 2, \$15 each (posted) .. \$.....

MAGAZINES

Subscription — \$15.00 \$.....

The lot: EG 1 — one before current issue \$.....

(excludes EG 13) — \$97.00 posted (save \$60) \$.....

Single Issues: EG 1 — current issue — \$2.75 each \$.....

Name Total enclosed \$.....

Address Postcode.....

No need to cut this page, just send us the details in a letter if you prefer.

SUBSCRIPTION

EARTH GARDEN, PO Box 188, Moreland, Victoria, 3058

Please post me 6/12/18 Issues of Earth Garden, starting with Issue number ...

I enclose:

☐ \$15.00 ☐ Two year subscription — \$31.00 ☐ Three year subscription — \$48.00

Name Postcode.....

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Back copies

EG1: Move out ... food co-ops ... Kibbutz and Moshav ... Montsalvat ... herbs ... Fred Robinson ... bean sprouts ... compost and mulch ... comfrey ... earthworms.

EG2: Start a garden ... Neil Douglas ... Keyline system ... Kiewa farms ... drying and storing food ... hydroponics ... recycling garbage ... nutrition.

EG3: Herbs ... compost ... fast fertiliser ... all about goats ... mudbricks ... domes ... water wheel ... bread ... salads ... pottery ... spinning ... vegies.

EG4: The honey bee ... back to the land in Tassie ... the transition ... black sheep ... tanning ... candles ... bread ... donkeys ... a wall hanging.

EG5: The wind — windmills ... windpumps ... generators ... raku pottery ... Cinva ram ... poultry ... Hamburgs ... moon planting ... fallout shelter ... vegan way.

EG6: Solar 1 — sun cuts ... solar cooker ... sundials ... Lost World ... Clifton Pugh ... concrete house ... Shalom ... Cajun cooking ... horses ... spirit of Nimbin.

EG7: Solar 2 — hot water ... Mudbrick techniques ... Angora goats ... make a leather bag and belt ... mushrooms ... natural dyes.

EG8: Gas power — methane digester ... by truck to Tassie ... cumbungi hats ... inkle loom ... candles and tapers ... country cottages ... A-frame ... school gardens ... sourdough.

EG9: LP gas ... Mary's place ... building with stone rubble (slipform) ... macrobiotics ... oats ... ducks ... rug frame ... how to kill a pig.

EG10: Granite house ... geese ... chip heater ... bamboo flutes ... build beehives ... Jarrah shingles ... mudbricks ... Bio-dynamics ... seaweed ... tandem ... Index (EG1-10).

EG11: Water — hydraulic ram ... waterwheels ... okra ... seed primer ... heavy horses ... tomatoes ... soft technology ... wine ... hard cheese ... start with hens.

EG12: Keeping food — drying ... salting ... bottling ... storing ... tahu ... tropic delights ... plant propagation ... plans for a solar water heater ... solar stills and cooker ... Moora Moora.

EG13: OUT OF PRINT.

EG14: Self-sufficiency — gardens for all ... Botobolar vineyard ... Terania Creek ... millet ... Robinson Crusoe ... Walden ... The Nearing's ... stone building.

EG15: A Lytel Herbal — growing and using herbs ... text and illustrations from the classic 16th C herbals ... modern commentary ... Index to EG15.

EG16: A Lytel Herbal (Part 2) — comfrey, lavender, wormwood, yarrow ... poultry shed ... peafowl ... goats ... basic beekeeping ... rammed earth building ... hydraulic ram.

EG17: Fencing — dry stone walls ... make soap ... nets ... pole shelter ... breeding black sheep ... The Autonomous House ... asparagus ... Aeolian harp ... ducks ... Khaki Campbells.

EG18: Fruit garden ... oranges ... lemons ... olives ... nuts ... tropical fruit ... fodder trees ... road building ... wood fired kiln plans ... Cinva-ram cottage ... sunflowers ... homebirth.

EG19: Wood heat — pot bellies ... Jotul ... cooking ... making a quid ... build a storage cellar ... bushfires ... stonefruit ... macadamia nuts ... binding your EGs ... tree planting ... budding.

EG20: Apples ... pears ... cordon and espalier ... build a haybale pig house ... pollen ... rose hips ... mudbrick flats ... solar homes ... gourds ... preserve fence posts.

EG21: Womancraft — all articles by women ... earthly arts ... axewomanship ... glove puppets ... spinning ... weaving ... easy rugs ... Sumatran house ... old roses ... Index (EG10-20).

EG22-23: Australian Access Sourcebook ... 150 pages ... Aborigines ... organic growing ... permaculture ... earth building ... wind ... solar ... water power ... technology ... water supply ... access to groups, plans, books, tools.

EG24: Place — 24 new settlers write ... Mare Carter ... Ron Edwards ... Neil Douglas ... Gundaroo Store ... Rainbow Region ... Mt Oak ... Moora Moora ... Universal Brotherhood ... bush ashram.

EG25: Australian Access Sourcebook (Part 2) — 130 pages ... livestock ... aquaculture ... fencing ... killing ... tanning ... food and nutrition ... grain grinders ... solar homes ... methane ... greenhouse ... Dorothy Hall.

EG26: The earth-built kasbahs ... owner built homes in stone ... timber ... mudbricks ... a slab cottage ... tree felling ... solar electrica ... acorns ... compost dunny ... quandong ... pumpkin recipes.

EG27: 100 tropical food plants for Australia (part 1) ... 16 legumes ... winged bean ... pigeon pea ... lablab ... cowpea ... adzuki bean ... blacksmithing ... bluestone building ... wok cooking.

EG28: Tropical food plants (part 2) ... horse and buggy ... packhorsing the Alps ... pigeon sheep ... Merinos ... bullocks ... tamarillo ... stringybark baskets ... solar trike ... persimmons.

EG29: Mudbricks — the monastery at Stroud ... Bob's bonza brickmaker ... earth floors ... curved walls ... herb roof ... cutting axe ... low energy design ... coconut mats ... mangoes ... tropical food plants (part 3).

EG30: Organic growing — compost heaps, pits, trenches, boxes, bins and barrels ... no-dig ... mulch carpets ... semi-arid growing ... preserving figs ... tempah ... pasta ... glass bottle windows.

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EG31: Energy — make a hydraulic ram ... second-hand windpump ... mudbrick sequels ... freezing food ... zucchini glut ... drying fruit ... all about sprouts ... hot box cooker ... building a log house (part 1).

EG32: Year of the Tree — St Barbe Baker ... tree tales ... how a tree works ... farm tree ... native from seed ... coppicing ... Neil Douglas interview ... cob building ... log house (part 2).

EG33: Tenth anniversary issue ... timber felling ... lifting poles ... post and beam design ... log house (part 3) ... parquet floors ... backyard rabbits ... goats ... fowls ... dry pit too ... portable henhouse.

EG34: China — communes ... trees ... fish farming ... recycling human wastes ... biogas ... transport ... travel notes ... Chinese earth building (Ron Edwards) ... rainforest ... bread and jam.

EG35: Bees and trees — tribute to St Barbe Baker ... backyard bees ... mudbrick workshop ... footings for earth walls ... make a solar collector ... magpies ... earthworms ... fodder trees.

EG36: Return to Nimbin ... new settlers ... a woman builder ... pawpaw plantation ... solar electric systems ... potty garden ... choughs ... Peru ... lavender sachet ... biological building ... farm structures.

EG37: HARD TIMES ... making paper ... newspaper fuel ... rags to rugs ... barter ... slush lamps ... sawdust stoves ... Depression dodges ... hand grain mills ... 120 household hints.

EG38: Hard Times tucker ... bread ... soups ... yoghurt ... no-meat meals ... beer ... electric grain grinders ... Gujarati village ... mudbrick hermitage ... earth walls and bushfires ... Noel's island.

EG39: Build Peter Pedal's bike wheel wind generator ... fire without matches ... bushfire defensive house ... avocado growing guide ... roships ... car battery power ... farm energy ... backyard food.

EG40: Communities ... running a food co-op ... three in a caravan ... Scott Nearing's a good life ... cyder in Tasmania ... our self-built house ... earth floors ... the billy ... olive oil ... hares ... cashew nuts.

EG41: Sahara ... Timbuktu ... Uganda ... pack donkeys ... horse float journey ... mat-tents ... build a S-rotor wind generator ... damper ... yeastless bread ... food co-op accounts ... real potatoes ... Index, EG31-40.

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EG43: Earth domes and vaults ... rendering earth walls ... quarry bush stone ... bush shower ... Peter Pedal's incinerator hot water and Pelton wheel ... low voltage wiring ... sheep ... donkeys ... horses.

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